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NATIONAL RESEARCH COUNCIL

MANUAL OF DERMATOLOGY

Issued under the Auspices of the Committee on Medicine of the Division of Medical Sciences of the National Research Council

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INTRODUCTION

THIS volume is one of a series developed under the auspices of the Division of Medical Sciences of the National Research Council to furnish the medical departments of the United States Army and Navy with compact presentations of necessary information in the field of military medicine.

The Committee on Medicine comprises Drs. O H. Perry Pepper Chairman A. L. Bloomfield Roger I. Lee W T Longcope W W Palmer James E. Paullin, Secretary and Russell M. Wilder The Committee on Information comprises Drs. Morris Fishbein, Chairman John F Fulton Richard M. Hewitt and Robert N Nye.

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FOREWORD

SKIN diseases are of greater importance in the military service than in civil life. Although there are few fatalities from these diseases they result in a considerable loss of effective manpower and partial incapacity of a material number of the personnel of many commands. Most of the texts on dermatology are too bulky to permit of their use under military conditions This manual was prepared under the auspices of the Division of Medical Sciences, National Research Council, with the intention that it should provide a compend of the principles of diagnosis and treatment of the more common skin diseases. It is hoped that it may prove helpful both to the medical officer who has occasion to treat cases of skin diseases in hospitals and also to the great mass of officers who must deal with these conditions at unit dispensaries and in the field

FOREWORD

THE need for a manual on military dermatology has been considered an urgent one by the Bureau of Medicine and Surgery Now with war actually under way and the expansion of personnel going on at a tremendous rate, the need is doubly acute.

As in other specialties, the Division of Medical Sciences of the National Research Council has come to our aid in bringing about the preparation of a condensed manual. Lt. Comdr Marion B Sulzberger Medical Corps, U S. Navy Donald M. Pillsbury Consultant in Dermatology to the Committee on Medicine, and Maj Clarence S. Livingood, Medical Corps, U S. Army collaborated in the preparation of this manual on military dermatology It will be of decided value to all the medical officers in the U S Navy for it is complete in every way and covers not only diseases we expect to find in the United States, but also those that will confront us in the tropics.

The Medical Department of the Navy appreciates very much the careful work that has been done in the preparation of this concise volume.

PREFACE

THE following statistics are quoted to permit an estimate of the scope of the problems of dermatology and syphilology in the armed forces

The latest available figures of the U S. Army (1940) indicate that *skin diseases* produced 9.80 per cent of all admissions to the sick list, and 10.41 per cent of all days lost. Venereal diseases (*exclusive of gonorrhea*) i.e., syphilis, chancroid, lymphogranuloma venereum, etc., were responsible for an additional 3 per cent of all admissions. In the U S. Navy during the last ten years, *skin diseases* produced 9 79 per cent of all admissions to the sick list, and 8.65 per cent of all days lost and venereal diseases (*exclusive of gonorrhea*) were responsible for about 8 per cent of all admissions, and 6.75 per cent of all sick days.

It is to be recalled that these are all peacetime figures, and that the diseases in these groups have always experienced a rapid relative increase under conditions of military expansion and actual warfare.

It must also be borne in mind that the relative number of ambulatory cases is probably greater in cutaneous disease than in diseases of other organs or systems. Most dermatologic patients can remain up and about. It is not surprising, therefore, to find that the foregoing figures for skin diseases represent far less than *half* their actual incidence. The number of dermatologic cases seen in a military hospital is doubled when one adds to the hos-

pitalized cases the ambulatory patients seen by the dermatologist. During a fourteen months' period at a 750-bed Army hospital at Indiantown Gap there were 736 *hospitalized* cases of skin disease, and 1232 *ambulatory* cases This ratio of hospitalized to nonhospitalized skin cases may be regarded as a representative average throughout both services.

The foregoing figures indicate that it can be conservatively *stated that some 20 to 25 per cent of all diseases* in the armed forces are the object of dermatosyphilologic management.

The Medical Corps of the Army and Navy have periodically prepared and distributed circular letters and directives designed specifically to guide the military physician in the management of venereal diseases. But there is no military directive available to help the Army and Navy medical officer in his approach to cutaneous diseases. Recognizing the importance of dermatoses in the armed forces, as well as the present lack of any specific directives in this field of medicine, the Surgeons General of the Army and of the Navy have suggested the preparation of this Manual of Dermatology under the auspices of the National Research Council

The objective of this manual is to set forth, briefly and simply the management of dermatoses encountered in the armed forces Since the patients treated will except in occasional instances, be adult males, emphasis has been placed on the common skin diseases affecting persons of this age-sex group Specific discussion of the few skin diseases occurring preponderantly or only in children, in the aged or in the female will not be attempted However the discussions on diagnosis and the directions for treatment will it is hoped, be sufficient to

enable the medical officer to deal satisfactorily with all but the most unusual or special dermatoses encountered in the very young, the very old, or in women.

No rarities will be discussed, no obscure diseases, nor any untried methods of treatment. Fine points of definition, discussions of theories of treatment, or of pathogenesis, will be curtailed to the essential minimum nor will any attempt at discussion of the histopathologic features of skin diseases be made.

The special diagnostic and laboratory procedures described include only those which are relatively simple and useful in practice. The practical limitations set by the restricted conditions of time, space, facilities, and supply of the battalion medical chest, of the small ship, or of the isolated station, will be borne in mind and will determine the diagnostic and therapeutic procedures recommended as "Simplified Treatment" and the greater possibilities and facilities of the larger medical units, including the large ship, dispensary or hospital, will determine the recommendations under the heading of "Hospital or Sick Bay Extended Treatment." Similarly the *recommended formulary (see Appendix)* will be divided into two categories (1) for the smallest unit of the Medical Corps ("Simplified Formulary") and (2) for the general and large station hospitals ("Hospital Formulary")

By and large, it has been found that the dermatologic problems of the Army and the Navy are almost identical. Some slight differences exist, such as the higher incidence of plant dermatitis in the Army or the fact that the sailor who presents an acute eruption usually has a sick bay available where medicated baths can be given, wet dressings applied, etc. while the soldier who is with his regi-

ment cannot, as a rule, be given medicated baths or wet compresses. Minor differences of this kind have been met here by mentioning both the Army and the Navy method of dealing with the specific problems

In compiling this manual, the authors not only have relied on their own military dermatologic experience, but also have drawn freely from textbooks and the experience of others. Regrettably the space available and the nature of this practical directive do not allow for credits, for priority or for mention of sources. Many of the passages and much of the material came from the following sources

Sulzberger Marion B., and Wolf Jack Dermatologic Therapy in General Practice Year Book Publishers, Chicago 2nd edition, 1942

Stokes, John H., and Associates Fundamentals of Medical Dermatology Department of Dermatology Book Fund Philadelphia, 1942.

In particular the chapter on 'Principles of Local Treatment" is from the former source and the basis for several of the charts on the distribution of various dermatoses, from the latter Grateful acknowledgement is hereby made to the authors and publishers for permission to include quotations and cuts.

The smaller medical units in the Army and the Navy cannot be expected to carry large special textbooks. This condensed manual however is not designed to, and cannot be expected to replace more complete standard texts. A small *practical* complete modern text in dermatology and in syphilology such as those just mentioned should be available in all medical units larger than the regimental dispensary or the small ship In still larger

medical units, the smaller texts should be supplemented, when possible, by some more comprehensive and voluminous treatise, for example

Sutton, R. L., and Sutton, R. L., Jr *Diseases of the Skin*. C V Mosby St. Louis, 10th edition, 1938.

Ormsby O S. A Practical Treatise on Diseases of the Skin. Lea and Febiger Philadelphia, 4th edition, 1928.

Andrews, G C. Diseases of the Skin. W B. Saunders, Philadelphia, 2nd edition, 1938

Becker S. W., and Obermayer M B Modern Dermatology and Syphilology J B Lippincott, Philadelphia, 1940

and special monographs such as

MacKee, George M. X rays and Radium in Dermatology Lea and Febiger Philadelphia, 3rd edition 1938.

McCarthy Lee Histopathology of Skin Diseases. C. V Mosby St. Louis, 1931.

MacLeod, J M. H., and Muende, I Pathology of the Skin. Paul Hoeber New York, 1940

In addition, the following texts on syphilis will be found very useful

Stokes, John H Modern Clinical Syphilology W B. Saunders, Philadelphia, 2nd edition, 1934.

Moore, J E. The Modern Treatment of Syphilis. Charles C Thomas, Springfield, Ill., 2nd edition, 1941.

We are deeply indebted to Brig Gen. C. C. Hillman of the Office of the Surgeon General of the Army to Rear Admiral Ross T McIntire, Surgeon General of the Navy

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CONTENTS

to Col. Asa M Lehman, Medical Corps, U S Army and to Capt. C S Stephenson and Comdr E H Cushing of the Naval Medical Corps for valuable advice on many of the medicomilitary aspects of this manual. Moreover the newly established well-equipped and well-staffed Departments of Dermatology and Syphilology at the Indian town Gap Station Hospital (under the command of Col Asa M Lehman) and at the U S Naval Hospital New York N Y (under the command first, of Rear Admiral C W O Bunker and, later of Capt. G E Robertson) have served us as working models from which we have derived much practical information. We are also indebted to Dr J Gardner Hopkins for reviewing the chapter on "Fungous Infections

The charts showing the distribution of various dermatoses were prepared by Miss Edna Hill and a majority of the photographs were taken by Aaron S Stephenson Jr., both of the Harrison Department of Research Surgery of the University of Pennsylvania We extend our thanks also for a considerable number of photographs to Col James Ash Curator of the Army Medical Museum Dr John H Stokes of the Department of Cutaneous Medicine of the University of Pennsylvania Dr I S Ravdin Dr Carmen C Thomas, Dr Thomas J Cook, and Dr Louise E Tavs of the University of Pennsylvania Dr George M MacKee of the Skin and Cancer Unit of the New York Post Graduate Medical School of Columbia University and Dr Carroll S. Wright of Temple University

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MANUAL OF DERMATOLOGY

CHAPTER I

PRACTICAL DIRECTIONS FOR USE OF THE MANUAL

THE *general medical* officer usually has more difficulty diagnosing skin diseases than diseases of other organs or systems. While there is no substitute for experience, the dermatologically untrained medical officer may accomplish much toward the classification of a presenting skin disease by the following approach

1. Determine the *types of individual skin lesions* These need not be described in unfamiliar complicated terms. The use of simple descriptive adjectives will suffice, *e.g* "papular" or "vesicular" or "papulosquamous" (papules with scaling) or "nodulo-ulcerative." Further qualifying terms need not be of the traditional classic dermatologic variety provided they are accurate and are *based on adequate and thorough inspection*. Cultivate the habit of seeing *everything* on the skin.
2. Determine the *distribution* of the eruption. Under conditions of ordinary dispensary or hospital practice the entire skin surface and mucous membranes should be inspected.
3. Obtain a *history* The following *questions* are basic in regimental dispensary or sick call practice
   (a) "How long have you had this eruption? Did it look like this when it started?"

more detailed description and suggestions for treatment may be found in other chapters. In these detailed sections the treatment is divided sharply into *Simplified* methods based on a limited basic formulary and *Hospital* methods for those cases in which more extended treatment measures are necessary The former constitute the therapy which may be carried out successfully in field dispensaries or small sick bays the latter assume the greater facilities and pharmaceutical supplies of larger treatment centers and, it is hoped, will offer sufficient guidance to the general medical officer for all but the rarest or most complicated and difficult cases.

The following examples, simplified for purposes of clarity will illustrate the most effective means of utilizing this manual

1. A man reports to sick call with fissuring, maceration, and itching between the fourth and fifth toes of both feet, with increased sweating On reference to the section on diseases of the feet in Chapter IV the medical officer will find a list of the five diseases most commonly encountered in this region, the pertinent diagnostic points of each disease, and photographs of representative cases. It will be obvious that this man has chronic fungous infection of the feet complicated by hyperidrosis. The treatment of these two conditions will be found in appropriate sections. Definite criteria for referral of the patient to a hospital dispensary have been put down. In the absence of early improvement, or the development of secondary infection, consultation and possible hospitalization become advisable.

(*b*) "Have you ever had a skin disease before?"

(*c*) Have you taken any medicine recently or have you applied any treatment to your skin? If so, what?"

(*d*) "Do you feel sick now or were you sick before the eruption came out?"

The method of presentation adopted in this manual is designed to enable the medical officer to arrive at a working diagnosis in a short period of time. For practical purposes, the cutaneous surface has been divided into various regions which are commonly subject to eruptions, and the important dermatologic diseases involving these sites most frequently have been listed. Photographs of representative cases and the most pertinent points of differential diagnosis have been incorporated in a single chapter (IV) It is suggested that this section be consulted in the case of any man offering difficulty in diagnosis. At least 95 per cent of the cutaneous diseases which will be encountered among military personnel are there listed.

So far as possible it is desirable to examine the *entire cutaneous surface* of every patient, except when the disease is obviously a simple one localized to a restricted area, *e g* a wart on the hand. However at sick call when it is sometimes necessary for the medical officer to examine a large number of men in a short period of time, complete examination of the skin may not be feasible. In consideration of this, special emphasis has been placed on the warning signals of more extensive involvement of the skin and of the possible systemic and general medical significance of localized cutaneous signs.

When a reasonable diagnosis has been established,

4. A soldier in field training at a military reservation reports because of an acute vesicular eruption on the hands, forearms, face, and legs. The presence of vesicles, erythema, edema, and oozing classifies the condition as a dermatitis, and the distribution (Chap. III) indicates an external contact source, probably a plant. On the basis of the extent of the dermatitis and the probability that it will increase if clothing saturated with the plant extract continues to be worn, the man is hospitalized. Specific directions particularly in regard to avoidance of further irritation from treatment, will be found for the guidance of the hospital medical officer In similar cases which are not sufficiently extensive to cause much disability simple treatment with medication available in the battalion medical chest will be adequate.
5. In a patient with an ulcerated lesion of the penis, it will be found that the only recommendation for medical officers in dispensaries with limited facilities will consist of referral for consultation. There are no simple treatments, and no certain morphologic criteria for diagnosis in penile lesions the medical implications are too serious for anything but the best possible laboratory methods and other special aids to diagnosis and treatment.

Familiarity with the *distribution* of the common dermatoses is essential to even moderate competence in the diagnosis of cutaneous disease. It is suggested that the medical officer review carefully the characteristic distributions as presented in Chap. III. After this review occasional reference to this material in connection with

2 A man reports to sick call because of an itching eruption of the hands On examination it is found that he has vesicles and excoriations which tend to localize in the webs of the fingers. On reference to the section on cutaneous diseases of the hands it is found that scabies is the first diagnosis to consider in such an eruption, and that a complete examination is essential It is then found that lesions are present on the buttocks, axillary folds, scrotum, and the shaft of the penis, and the diagnosis of scabies is easily confirmed. Specific directions for treatment, and precautions to prevent *spread of the infestation will be found in the section on scabies.*

3. A man reports to sick call because of a papulosquamous eruption on the trunk which appeared two days previously On complete examination it is found that the individual lesions are covered with a fine scale, are oval in shape, with the long axis tending to follow the lines of cleavage, and that the eruption exempts the face. Under the list of eruptions commonly seen on the trunk will be found a group of five diseases which are papular and which scale. The type of lesion and the distribution tend to rule out four of these diseases, and indicate a diagnosis of pityriasis rosea, though it is always necessary in lesions of this type *to do a serologic test for syphilis (STS) In* the appropriate section, the simple treatment for pityriasis rosea is outlined together with the suggestion that if ultraviolet irradiation is available the course of the disease may *ordinarily* be greatly shortened

CHAPTER II

DIAGNOSIS BASED ON THE PRIMARY AND SECONDARY LESIONS AND ON THE HISTORY

Types of Skin Lesions

In the following pages are listed the chief lesions which occur on the skin, with the corresponding common diseases presenting such lesions. Various traditional descriptive terms have been omitted intentionally for the sake of simplicity Careful, accurate observation of a skin lesion and a short descriptive summary are far more useful and less dangerous than impressionistic "snap" diagnoses. Often more harm than good results from treatment based on summaries such as "It looks like. or "Tentative diagnosis. "

The Macule.—A circumscribed change in color of the skin, without elevation, depression, or visible scaling. The color may vary The chief common macular eruptions are

1. Changes in the inherent pigment of the skin *freckles* flat pigmented *moles* *loss of pigment* (leukoderma)
2. Pink to red inflammatory macules. If the reaction is severe, the lesion becomes papular hence inflammatory *macular* eruptions are *often symptomless* and are not noted by the patient. They may be difficult to see except in a good light. Examples are the roseolas of typhoid and secondary

individual cases will be found helpful and the essential simple facts regarding distribution as an aid to diagnosis will quickly become implanted in the examiner's mind.

In a variable percentage of cases an exact diagnosis may not be possible immediately If the skin lesion is significant in regard to the present or possible future ability of the soldier or sailor to carry out his duties *consultation* should be sought, and this should ordinarily result in more accurate diagnosis. If immediate treatment is essential even in the absence of a satisfactory diagnosis, reference to the chapter on "Principles of Therapy" (V) and to the indications given in connection with the formularies in the Appendix will afford guidance in the selection of appropriate local treatment.

Under no circumstances however should such a course be employed in the case of any genital or other lesion of possible venereal origin, or in skin lesions of a possible malignant character (cancer or precancerosis) or those of a type which might serve as a valuable indication of a systemic disturbance to a more experienced examiner Ill-advised local treatment under such conditions may obscure the diagnosis and result in dangerous delay in initiating proper treatment. Only general rules can be set down for such situations the proper handling of them will depend on the judgment of the examiner and will distinguish the competent medical officer from the slipshod or incompetent one.

the skin may be papular (and are often grouped) but tend to be larger and more indurated, and to undergo deeper ulceration than secondary papules. The "copper color" of cutaneous syphilitic lesions has been greatly overemphasized.

3. *Psoriasis.*—In the chronic phase of the disease, the papule of psoriasis tends to be one of the most characteristic of all dermatologic lesions. It is squamous (scaling) has a deeply erythematous base, and is ordinarily *sharply demarcated* from the surrounding normal skin. The lesion is palpable but does not feel deeply indurated. The scale is ordinarily silvery or mica-like, and does not flake off easily The papules may become confluent to form a plaque. Psoriasis often has a *characteristic distribution* (see Fig 1) Psoriasis does not produce scars.

4. *Lichen Planus.*—An angular flat topped papule, usually of violaceous color tending to occur in a characteristic distribution (see p. 268) Look for oral and penile lesions.

5. *Acne.*—The inflammatory papule of acne vulgaris is always accompanied by some comedones (black heads) often becoming pustular Its distribution is characteristic (see Fig 9)

6. *Drug Eruptions.*—Drugs may produce a wide variety of skin lesions, among which are chronic or acute papular or papulopustular eruptions (see Fig 7 and Chap. XIV)

7. *"Scratch" Papules.*—These are a local reaction to scratching, rubbing, or digging of the skin *in areas which may be reached easily* Flat-topped, they are often covered by a bloody crust. Look for an

syphilis typhus and the macules of some *allergic drug reactions* particularly those due to the sul fonamides, barbiturates, or salicylates.

Erythematous macular eruptions should be suspected of being of general medical significance until proven otherwise. Look for *purpura* in the lesion This may be due to a simple drug reaction or to blood dyscrasia or other causes Always examine gen erally and take the man s temperature

3 The blue macules of *pediculosis pubis*

Raised, Circumscribed, Palpable Lesions Containing No Fluid.—These include *papules* (small) *nodules* (larger) and *tumors* (largest and deepest) The differentiation according to size is worth while because it is often a distinct aid to diagnosis. A *wheal* (or hive) is a special type of papule which is ordinarily evanescent.

The Papule.—The common papular eruptions are

1 *Pityriasis Rosea.*—This is often hardly palpable and barely raised above the surface. There may be a mixture with macules, *i.e. maculopapular* As in the case with many papular lesions, there is some scaling and this is of a characteristic type. The lesions are principally oval in shape (see Fig 2, and p 266)

2. *Early Mucocutaneous Syphilis*—In general the frankly papular lesions of early syphilis have a "feel or induration which is suggestive of their nature About the mouth or anogenital regions the papules become eroded and highly infectious. As in the case with other papular lesions in these moist sites, the papules tend to become juicy and hyperplastic. Late gummatous infiltrates in

cially if multiple. Aside from nodules such as *nevi*, *lipomas*, and *fibromas*, the important conditions characterized chiefly by nodules are

1. *Syphilis* either early infectious (especially recurrent) or late gummatous. Look for scarring or atrophy at the sides or near the nodule. Be especially suspicious of nodules in a circinate or grouped arrangement.
2. Local reaction in the blood vessels of the deeper portion of the skin to *products of infection*, or as an *allergic* phenomenon. *Erythema nodosum* (rheumatic, streptococcic, tuberculous, drug allergy etc.) (see p 290) *Erythema induratum, erythema multiforme.*
3. Acute or subacute *pyogenic lesions* about sebaceous glands, sweat glands, and lymph nodes. The latter are often mistaken for nodules within the skin, especially in aberrant locations. Always look for a regional focus of infection if a single lymph node is involved. This may be of pyogenic, tuberculous, deep fungous, or venereal origin.

> In Any Inflammatory Nodular Eruption, Suspect a Relation to a General Infection. Except in Cases of Obvious Drug Allergy Such Cases Deserve Complete Study The Prognosis May Be Serious. Obtain an STS.

Tumors.—Sharp differentiation of tumors from nodules is often unnecessary from the standpoint of practical diagnosis and treatment. All patients with tumors should be subjected to complete study *including biopsy* if indicated (see p 350 for technic)

underlying skin disease particularly chronic der matitis, lichen planus, chronic urticaria, pediculosis, or scabies Scratch dermatitis may be maintained by habit, or be an expression of an under lying neurotic instability

8 *Warts*—While the diagnosis is usually obvious, multiple flat warts (face, backs of hands chiefly) may look like lichen planus. Painful plantar warts may masquerade as calluses or corns for years. Warts about the anogenital region may be large and moist.

9 *Miscellaneous Papular Lesions*—(*a*) *Molluscum contagiosum* is a virus infection producing a yel lowish umbilicated papule from which a cheesy substance is expressible on incision (*b*) *Seborrheic keratoses* are flat, brown greasy papules of varying size, often mistaken for moles. They are of little importance as regards malignant degener ation. (*c*) *Senile keratoses* sometimes occur on the skins of even young men most frequently in areas exposed to sunlight and wind, "sailor's skin. The hard horny top is the distinguishing feature, and such lesions are very subject to *malignant degen eration* (*d*) *Xanthomas* characteristic yellow papules or plaques.

Take Blood Serologic Tests for Syphilis (STS) in All Papular Dermatoses.

The Nodule.—Larger than a papule (usually more than 1 cm in diameter) it is often a little deeper in the skin or entirely beneath it. Nodules vary in color They are *warnings* of possible general medical significance, espe

bedsion. From a practical standpoint, pustules arise as a result of two processes (1) as an acute pyogenic infection of the normal or otherwise diseased skin, (2) as an evolutionary component of a chronic skin disease. The principal conditions productive of free pus in the skin are outlined in Fig 107 They include

1. *Impetigo* arising on normal skin, about hair follicles, in severe miliaria, and in sweat glands.
2. *Acne* and *rosacea* (*not always pustular*) *furuncles* and *carbuncles*
3. Various *chronic eczematous eruptions* when secondarily infected.
4. Some *drug eruptions* particularly those due to iodides or bromides.
5. *Contact dermatitis* due to oil or tar (around hairs)
6. Acute *fungous infections* of the hands and feet.
7. *Smallpox chickenpox vaccinia*, and *herpes* (not always)

Presumptive bacteriologic differentiation of superficial pustular pyoderma is sometimes possible, as follows

SUPERFICIAL STREPTODERMA	SUPERFICIAL STAPHYLODERMA
Thin walled, easily ruptured pustule.	Thicker-walled, more persistent pustule.
Highly erythematous base, with surrounding zone of inflammation.	Often less inflammatory reaction at base
Thicker more adherent crust.	Thin, stuck-on crust.
Frequent lymphangitis and/or *lymphadenopathy*	Often no marked lymphatic involvement.
Ulcer *under crust*	Ulceration not so common (unless around hair follicle)
Rapid *response to local* sulfonamide therapy (*except* when caused by *anaerobic* streptococci)	Not so rapidly influenced by local sulfonamide therapy

Vesicles.—These are collections of serous fluid in walls of varying thickness. Larger lesions are called *bullae* Recognition of a vesicular component of an eruption is of great practical importance because

1 Vesicles are often indicative of a contact type eczematous eruption.
2. They do not occur in acquired syphilis and are rarely seen in psoriasis or lichen planus
3 They are indications for initiating mild and soothing treatment.
4 A recurrent bullous process is of possible serious general import.
5 In a chronic dry skin disease under treatment, the appearance of vesicles suggests overtreatment or sensitivity to the applied medicament.

The chief vesicular and bullous eruptions are

1 *Eczematous contact dermatitis*
2 *Herpes simplex* and *zoster* Characteristic *tense grouped* vesicles on an erythematous inflamed base (see Fig 66)
3 *Chemical thermal solar* or *friction injuries*
4 Certain less common diseases, such as *bullous erythema multiforme bullous drug eruptions* (e.g phenolphthalein, sulfonamides, barbiturates, iodides, or bromides) *dermatitis herpetiformis* or *pemphigus* Look for mucous membrane lesions. These diseases may be of great general medical importance (see Chap XI)

Pustules.—These are small or large collections of pus in walls of varying thickness In pustules on the palms or soles the lesions may appear to be papules if in doubt, lift off the top of the lesion with a superficial horizontal

tion underneath. Treatment designed to facilitate removal of these crusts is ordinarily essential.

(c) The reddish to black crust from dried blood, indicative of *bleeding* as part of the skin disease or of *excoriation* by the patient.

2. *Scales.*—Those of greatest practical diagnostic importance are

(a) The silvery stratified, adherent scale of *psoriasis*.

(b) The greasy yellow scale of *seborrheic dermatitis*

(c) The diffuse exfoliating scales of the very dry *ichthyotic* skin, of chronic dry *eczematous* eruptions, or of subsiding *exfoliative dermatitis*.

(d) The fine peripheral scale of *pityriasis rosea* or of *ringworm* of the groin.

(e) The adherent scale of chronic *lupus erythematosus*.

(f) The fine scale of *tinea versicolor*

Fissures.—The result of mechanical stress on diseased skin. Often deep, painful, and difficult to heal. The most common source of systemic infection arising from a skin disease. The most frequently involved sites are between the toes, about the fingers and elbows, at the angles of the mouth, nose and ears, and in the crural folds and gluteal cleft. Recognition is important for the comfort of the patient and prevention of cellulitis. Measures to relieve mechanical stress on the lesion are often necessary to produce healing

Ulcers.—These vary from superficial erosions which

Wheals (Chap XIII) —The chief morphologic distinction to be made on the individual lesion is in insect bites, which have a *tendency to grouping central puncture* and often a minute central vesicle, crust, or hemorrhage. In urticaria or angioneurotic edema, the wheals may vary greatly in size and distribution The lesions are ordinarily evanescent, but may recur over a period of weeks months, or even years. Involvement of the face *or other areas in angioneurotic edema may be confused* with cellulitis or contact dermatitis.

Secondary Lesions.—In the evolution of any skin disease toward cure or chronicity certain changes in appearance occur Since the initial or primary lesion of the disease may have become completely obliterated the *secondary* or *consequential* lesions must be relied on for diagnosis The process may be greatly altered by scratching, secondary infection, or treatment. The various consequential lesions, with the distinctive features which are of aid in diagnosis, are as follows

1 *Crusts*—Of various types the most important are

(*a*) The light yellow or brownish crust which is the dried residue of *serous oozing* It indicates the absence of infection and the probable absence of severe itching or at least restraint on the part of the patient. It is the crust of an *eczematous* type dermatitis and if dry underneath, is evidence that the skin disease is healing This type of crust is a natural protective dressing

(*b*) The dirty gray or green crust indicative of *infection*. Lift the edge of the crust to determine whether there is retained pus or ulcera

are justified by one which reveals a previously undiagnosed malignancy

6. *Self-Produced Ulcer*.—*These may be extremely difficult to diagnose*. Suspect geometric outlines.
7. Ulcers due to *vascular disturbances*

> Any Chronic Ulcer Is a Problem for Consultation and Hospital Study. Depend More on Cultural and Histologic Study than on Clinical Characteristics. Always Do Blood Serologic Tests for Syphilis (STS)

Scars and Other Connective-Tissue Replacements of Skin.—The most important are

1. Scars of *previous inflammatory disease*. The extent, depth, configuration, contractility or distribution may be highly suggestive of the preceding disease, *e.g.*, the noncontractile, annular scars of gummas, the distortion in scars of skin tuberculosis, the scars of lupus erythematosus.
2. *Keloids*.
3. *Scleroderma* of circumscribed or diffuse types.
4. The characteristic pigmented and telangiectatic atrophy due to *x-rays*.

Annular Lesions.—The presence of *annular or ringed* papules in an eruption is often extremely helpful in diagnosis. The common annular eruptions are

1. *Erythema multiforme* (often hemorrhagic or bullous)
2. *Impetigo*
3. *Syphilids* (late secondaries and secondary syphilids in Negroes)

heal without scarring to deep, chronic destructive lesions. Careful notes regarding the initial appearance of the ulcer should be made for future reference, including the following (1) single or multiple, (2) size of lesion (*measure*) (3) depth (4) arising from a previous nodular or tumorous lesion (5) any peculiarity of arrangement, *e.g* in a circle? (6) tendency to advance without healing or to heal on one side and advance on the other (7) presence of satellite, early infected or nodular lesions in the surrounding terrain (8) induration

The more common types of ulcers include

1 *Simple Pyogenic Ulcers*—If persistent under adequate antiseptic therapy suspect (*a*) trauma ill fitting shoes, or 'traumatic infected ulcers of lower legs and ankles (*b*) a predisposing medical background *e.g* diabetes, gross avitaminosis, blood dyscrasias.
2. *Nodular Gumma.*—Ringed arrangement, arising from breakdown of nodules tendency to heal spontaneously smooth, noncontractile scar
3. *Various Granulomas*—Deep fungous infections (blastomycosis, actinomycosis, sporotrichosis) tuberculosis of various types.
4. *Genito-infectious Diseases*—Chancre, chancroid and lymphogranuloma venereum, when occurring elsewhere than in the anogenital region often remain undiagnosed for prolonged periods.
5 *Malignancy*—Always suspect malignancy in any chronic, persistent ulcer of unknown cause, *regardless of the age of the patient or location of the ulcer* Do biopsies. A hundred unnecessary biopsies

(a) Scabies, pediculosis, and other *infestations*.
(b) Any *dermatitis* (e.g contact dermatitis and eczematous drug eruptions)
(c) *Urticaria*, including dermographism.
(d) *Dermatophytosis* Recurrence of severe itching is a good indicator of recrudescence of the infection.
(e) *Dryness of the skin*. Ordinarily itches only during cold weather
(f) In a skin disease which is usually not pruritic, *e.g.*, *psoriasis* the appearance of itching may indicate a flare-up and dissemination of the process, or a reaction to local treatment.
(g) Persistent itching of skin which is apparently normal. Suspect a *psychic* cause, or some general medical disturbance (*e.g jaundice leukemia, diabetes*)
(h) Itching associated with reactions produced by *drugs*. (Extremely variable.)
(i) The healing phase of acute superficial *pyodermas* etc.

Pain.—This is also extremely variable in different skin diseases and different patients. The skin diseases which most commonly cause pain are

1 Any acute *deep pyogenic inflammatory process* particularly in skin which is bound down, e.g., tip of the nose, ear canal, finger tip.
2. *Fissures* which are subject to mechanical stress—knuckles, perianal, interdigital.
3 *Pyogenic invasion* of eczematous skin when itching is replaced by pain, examine for evidence of cellulitis.

4 *Psoriasis*
5 *Drug eruptions*
6 *Pityriasis rosea.*
7 *Tinea circinata* (superficial fungous infection)
8 *Granuloma annulare*
9 *Urticaria* (occasionally)

Symptoms as Aid in Diagnosis of Cutaneous Disease

The threshold of pain, burning and itching in the skins of different individuals, and in the skin of the same patient at different times, is so variable as to make subjective symptoms an uncertain guide in the diagnosis of skin diseases. Certain criteria are helpful, however

Itching.—This is a symptom which is extremely variable. Often it is a reflection of the psychic tension of the patient. At times subject to sudden inexplicable recurrence without any visible change in the underlying skin disease. Itching and scratching are the basis for the perpetuation of many chronic dermatitic processes.

1 Itching tends to be worse at night in almost all *pruritic dermatoses because of* (*a*) *warmth* and peripheral vasodilatation, (*b*) absence of distraction by duty or recreation or (*c*) increased activity of a parasite, as in scabies
2. Itching tends to be worse after heavy work or in warm climates in dermatoses *of covered areas* of the body particularly on the feet or in folds of the body (crural folds, gluteal cleft, axillae) Itching tends to be worse when there are rapid changes of temperature or pressure, such as may occur on undressing
3 The *common causes of itching* are

not this is the first attack. *Example*: Instead of "Itching area on thigh," include a succinct short summary which will be informative at first glance, somewhat as follows: "Itching slightly scaling brownish patch on thigh. Recurrent, many previous treatments ineffective; worse in hot weather or when patient is nervous."

Family History.—This may give valuable aid in the proper classification and prognosis of the eruption. The skin diseases in which information of the inborn susceptibilities or constitutional tendencies of the patient is useful are: allergic dermatoses, particularly atopic dermatitis; seborrheic dermatitis, baldness, and acne and pyodermas (often associated); dry skin (ichthyosis); diabetes and other metabolic disturbances; psychoneurotic instability; syphilis; tuberculosis; dermal or other malignancy; any skin disease in blood relatives.

Personal History. AGE.—Important in acne (better with age); dry skin (worse with age); tendency to senile keratoses, rosacea (worse with age); atopic dermatitis (tends to disappear after twenty-five); ringworm of scalp (extremely rare in adults); ringworm of feet (look for ulcers or peripheral vascular disease in the middle-aged). Age *should not* be used as a determining criterion in (1) malignancy of skin or (2) whether a cutaneous lesion is due to early or late syphilis; grievous errors have resulted therefrom.

RACE.—Pemphigus in Jews and others from southeastern Europe; granuloma inguinale in Negroes; psoriasis and pediculosis capitis in whites; tuberculosis of skin in Europeans.

GEOGRAPHIC ORIGIN.—Leprosy from China, the Philippines, Cuba, southern United States. Yaws, pinta, and exuberant fungous or pyogenic infections in tropical climates. Typhus in various areas (subject to rapid epidemiologic changes).

SEASON.—The spring peaks of erythema multiforme and tuberculids; the spring and fall peaks of pityriasis rosea; the winter flare-ups of dry-skin dermatitis; summer contact weed and pollen dermatitis; winter recurrences of acne and psoriasis; the summer peaks of ringworm, intertrigo, and sweat eruptions. These are common seasonal incidences but are by no means always present in a given case. They may be extremely valuable clues to the nature and cause of the eruption.

OCCUPATION.—See "Contact Dermatitis, Eczema" (Chap. VI), "Chronic Infections of Skin" (Chap. VIII). Always consider any special duties of the soldier or sailor in connection with his eruption.

PREVIOUS TREATMENT. Local.—A history of all the types of treatment used, whether in the immediate or distant past. Which ones helped? Which ones irritated? Have x-rays been used; if so little or much? If treatment has recently been applied with unsatisfactory results, it is a good general rule to discontinue all treatment or to use only the mildest soothing measures until the

4. *Herpes zoster* The neuralgic pain of zoster is, in general, directly proportional to the age of the patient. Persistent postherpetic neuralgia is un common in adults below the age of forty five.
5. *Warts* at sites of pressure. Plantar warts on weight-bearing surfaces.
6. Lesions associated with *vasomotor disturbances* Gout, chilblain thromboangiitis obliterans.
7. Various small tumors associated with *neural or neu rovascular tissue e g* glomus tumors on fingers.
8. *Ulcers* Variable. In general, acute destructive ulcers are painful while large chronic ulcers due to syphilis or tuberculosis are less so.

The History

The *basic* history in any dermatological case is outlined on page 8 In general the medical officer will find it valuable to attempt first a diagnosis on the basis of the objective changes in the skin and the distribution of the lesions. Such a habit will rapidly lead to proficiency in the initial classification of the disease and in selecting the further examinations and procedures which are most likely to be useful. In sick-call practice it may not be feasible to obtain an exhaustive familial and personal history of the patient. Whenever possible, however the establishment of an adequate historical background for the eruption will be found extremely valuable. The most useful items of the dermatologic history are as follows

Chief Complaint.—Avoid quotation of the frequently uninforma tive and colloquial initial statement of the patient. It is useful to summarize briefly the answers to the initial searching questions of the examiner Include the general type of the eruption the initial site of the eruption and its spread the symptoms whether preceded by local or internal treatment or trauma, and whether or

CHAPTER III

DIAGNOSIS BASED ON DISTRIBUTION

CERTAIN common dermatoses tend to affect certain parts of the skin surface with such regularity as to constitute a distinct aid to diagnosis. In the charts on the following pages, the most common distribution patterns are indicated in diagrammatic fashion. It must not be concluded that these dermatoses always occur in the indicated distribution. On the contrary the sites of involvement may at times be quite dissimilar to the common pattern, and the diagnosis must then rest on the appearance of the individual lesion or on other clinical and laboratory findings.

Often the appearance of an eruption may be so changed by scratching secondary infection, or overtreatment as to obliterate almost completely the characteristic individual lesion. The distribution may then be the chief clue to the diagnosis. An example of this is *scabies* which almost always involves certain sites to the exclusion of others, but in which the scabetic burrow is so frequently obscured by infection or scratching as to make the distribution pattern the most reliable criterion for the diagnosis.

Reasonable Familiarity with the Common Dermatologic Distributions Is Essential to Proficiency in Diagnosis.

possible irritative effects of treatment can be distinguished from the underlying eruption. Disregard of this rule is a frequent source of unduly prolonged disability from skin disease.

Internal Medication.—In any skin disease the previous taking of medication by mouth or otherwise should be noted. Self medication should be at a minimum in the armed forces, but must always be inquired into. Often a patient does not regard cathartics, bromides, or tonics as medicine; if a drug eruption is suspected ask about commonly used proprietaries by name.

General Medical History.—Too frequently the relation of a dermatosis to a general medical disturbance is overlooked. It is unnecessary here to summarize the requirements of a medical history but only to emphasize that good dermatological diagnosis and treatment must rest on good internal medicine. The "externalist" approach to dermatology will be found sadly wanting. Skin diseases must at times be studied with all the diagnostic measures available to general medicine. Repeated references will be made in this manual to skin diseases which are a reflection of a disturbed general medical state, and in which the skin lesions may furnish an invaluable clue to the medical diagnosis. Complex and sometimes inexplicable associations of the course of various cutaneous diseases are often noted with infections, either general or focal changes in diet, environment, or climate or variations in nervous tension. References to some of the more regular and established of these associations are made in the sections on particular dermatoses, but these can be only partial.

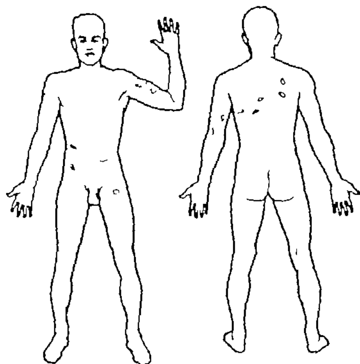


FIG 2.—*Pityriasis rosea.* Oval lesions, with long axis along lines of cleavage. "Christmas tree" appearance of lesions on trunk. Note usual exemption of face. The distribution is variable, but this is characteristic of at least 75 per cent of cases. The most common variant is the "inverted" distribution, in which the lesions are principally on the extremities (see also Fig. 63)

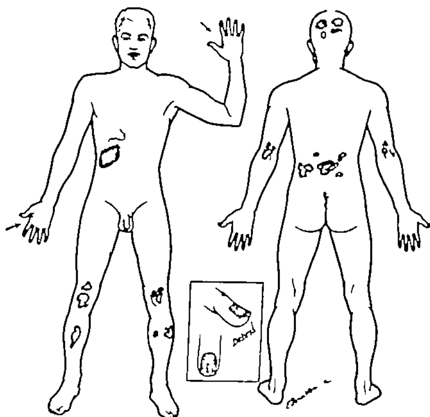


Fig 1—The most common distribution of *psoriasis*. Note the discrete character of the lesions. The margin between psoriatic and normal skin is ordinarily sharp and distinct. The face is ordinarily free of lesions. In patients with oily seborrheic skins the lesions of psoriasis may occur chiefly in the seborrheic areas (see Fig 11) Psoriasis may sometimes become acute, generalized and disabling (p 257) Compare distribution with photographs of characteristic lesions (Figs. 20 57 58, 59 81)

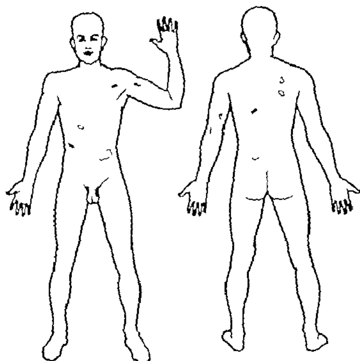


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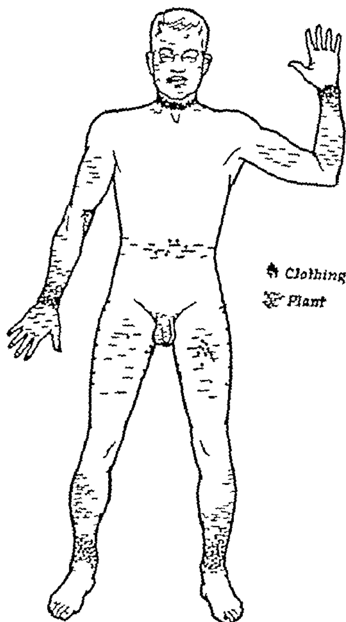


Fig. 3—The distribution of *contact dermatitis*. Many variants depending on the site of skin contact with the *offending allergen*. Look for the cardinal signs of dermatitis (p. 169). Suspect a contact cause when an eruption involves chiefly the exposed portions of the skin or parts *subject to friction from clothing* (see Figs. 27, 28, 29, 30; pp. 189–191)

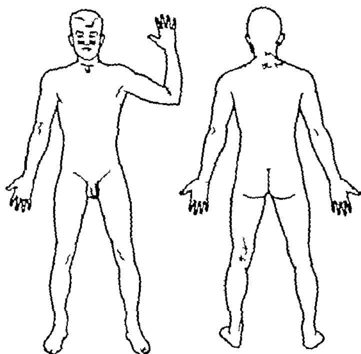


Fig. 4.—*Atopic dermatitis* highly characteristic distribution. Severe often intractable eczema in patients of allergic stock. One of the most frequent causes of discharge for disability due to skin disease (see pp. 170, 195) Look for atopic cataract.

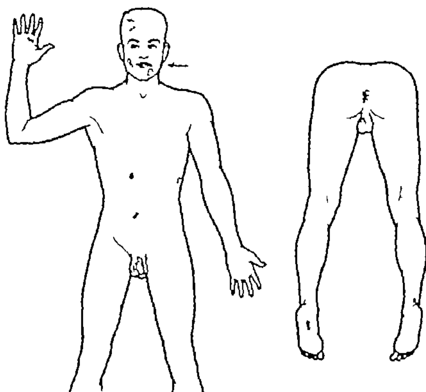


Fig. 5.—*Early mucocutaneous syphilis.* A characteristic ensemble. Unless the individual lesions are *frankly* vesicular rule out early syphilis when any of the above areas are involved. Consider infectious relapse particularly in lesions about mouth and anogenital region. *The* individual lesions simulate many skin diseases and may be numerous and obvious, or few and *easily* overlooked. *Take serologic tests for syphilis routinely* (see Figs. 23, 37 44, 69 70 75, 79 80, 8.., 89)

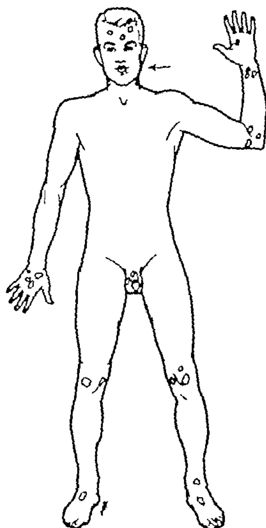


Fig. 6.—*Erythema multiforme.* Distribution variable, but this is typical of that seen in over 75 per cent of cases. The individual lesion is usually very characteristic. The medical implications may be serious (see Figs. 35, 36, and pp. 287-289). The arrow indicates buccal lesions.

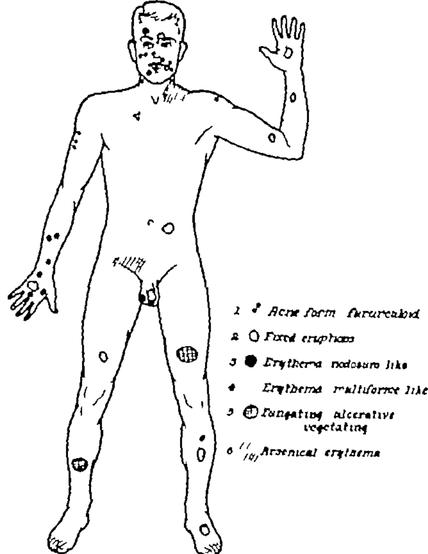


Fig 7—Some common forms of *drug eruptions* (*dermatitis medicamentosa*) and their characteristic sites. Usual causes (1) bromides, iodides (2) phenolphthalein, phenacetin, salicylates, barbiturates, arsphenamines, gold salts, etc. (may affect mucous membranes) (3) bromides, iodides salicylates, barbiturates sulfathiazole (4) phenolphthalein bromides, iodides, salicylates, barbiturates, sulfonamides (5) bromides and iodides (6) arsenicals mapharsen neoarsphenamine etc.

Scarlatiniform and morbilliform eruptions (sulfonamides, salicylates, barbiturates, etc.) eczematous and erythrodermic eruptions (quinine, arsenicals, barbiturates etc.) and many other forms are not depicted (see Chap XIV)

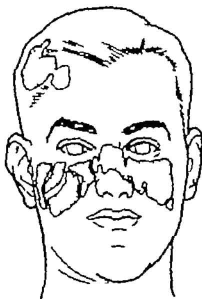


Fig. 8.—*Lupus erythematosus.* Chronic discoid form. The characteristic "butterfly" distribution. By no means always present. The external ears are frequently involved. Differentiate from pellagra and other sensitivity to sunlight. Look for evidence of dissemination or systemic involvement (see Fig. 56)

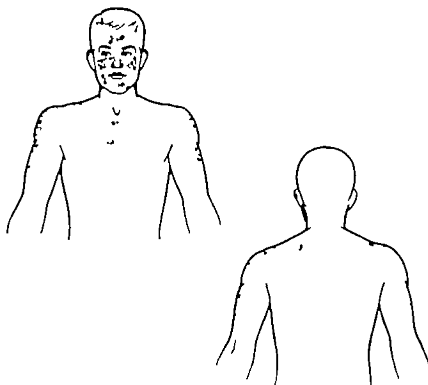


Fig. 9—*Acne vulgaris and rosacea* (heavily stippled areas on face represent rosacea sites) Frequently confused; differentiation important because treatment differs in some respects. Acne is based on sebaceous dysfunction in the skin with an endocrine background; rosacea is based on vascular dysfunction in the skin, with varied systemic factors. Look for keratitis associated with rosacea.

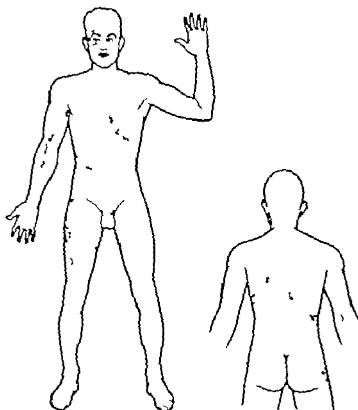


Fig. 10.—*Herpes zoster.* These are representative unilateral neural distributions. Involvement of eye in herpes supra-orbitalis may be serious. Herpes zoster of arm or leg is unusual, and hence often undiagnosed (see Figs. 43, 46)

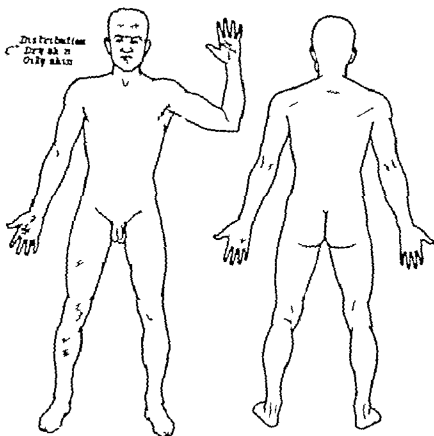


Fig 11.—Seborrheic (oily skin) and ichthyotic (dry skin) distributions. Hereditary mild to severe disturbances of skin physiology which are important backgrounds of many dermatoses particularly eczematous dermatitis and pyoderma. Seborrheics do not tolerate greasy ointments well. Ichthyotics must be greased, particularly in cold weather and do not tolerate soap or other alkaline substances well.

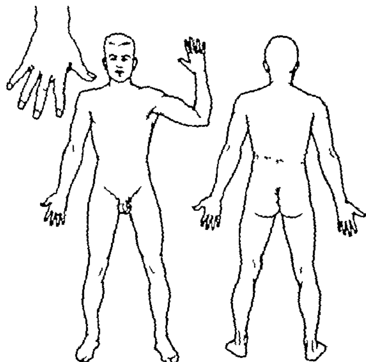


Fig. 12.—*Scabies* A highly characteristic distribution. Extent of eruption varies directly with general hygiene of skin. Secondary pyoderma may be an outstanding feature (see Figs. 82, 68, 82) The eruption may become very profuse in men on active combat duty aboard small ships, or in isolated stations.

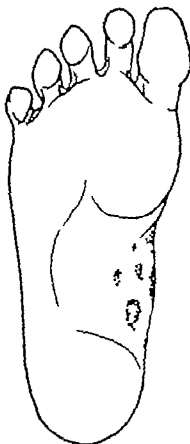


Fig. 13.—*Fungous infection* (ringworm, dermatophytosis) of feet. These are the sites of predilection. Distinguish from contact dermatitis (Figs. 15, 16 17 19)

CHAPTER IV

DIAGNOSIS OF ERUPTIONS OF COMMONLY INVOLVED SITES

IN skin diseases, examination of the entire skin surface is ordinarily essential to correct diagnosis. However complete examination of the skin offers considerable difficulty whenever men are to be seen quickly or in large numbers, and may be impracticable under field conditions. With a little planning and organization, the following substitute for stripped examination may be carried out without significant interference with ordinary sick-call routine.

1. Have the patient remove shirt and shoes while awaiting examination.
2. When the man is about to be examined, the socks are taken off, and the underwear dropped to the waist.
3. After inspection of the head, mouth, trunk, and feet, the trousers can be dropped to permit inspection of the genitalia, anus, thighs, and legs.

When the dermatosis is confined chiefly to certain areas, various *differential diagnostic possibilities* present themselves, depending somewhat on the region of involvement. The following sections are presented as a *guide to the rapid diagnosis of affections favoring certain regions.* The lists of possibilities and the illustrations are not all-inclusive, and rarities, especially those without

apparent general medical significance, have intentionally been omitted. These sections are intended as a *practical guide* in the selection of treatment based on an adequate diagnosis.

The Feet (see Figs 15–26)

These are subject to a variety of physiological and mechanical traumas which make them a fertile field for dermatoses particularly for those of military significance Some of these traumas are (1) the feet are confined in relatively nonporous coverings of heavy shoes which interfere with the removal of sweat, and are a source of mechanical and chemical irritation (2) the bacterial count of the surface of the feet is enormously high, more so than of any other portion of the skin (with the possible exception of the perianal region) (3) the conditions for the growth of fungi are ideal namely moisture and heat, and an abundance of keratin in the nails and thick horny layers of the skin (4) the hygiene of the feet is ordinarily comparatively poor (5) the feet are subjected to extremes of heat and cold and to a variety of passing or permanent peripheral vascular changes.

The chief *dermatoses* affecting the feet are

1. *Fungous infections* (dermatophytosis, athlete s foot) intertriginous involvement between the toes, particularly soft corn in the fourth interspace vesicles on *arch* and *sides* of the sole (Figs. 15 16, 17)
2. *Eczematous contact dermatitis* Reaction to substances in socks or shoes at sites of *closest contact with them* Webs of toes relatively clear (Fig 19)
3. *Pyoderma secondary* to either of above, or arising primarily Pustules on an erythematous base

lymphangitis or cellulitis of leg *femoral* lymphadenopathy (Figs. 18, 21 22, 24)

4 *Plantar warts* Single or multiple. Distinguished from ordinary calluses by a keratinous top in which skin whorls are not visible, and by brownish-black dots in center A virus infection, transmissible to other parts of foot or to other men, but not ordinarily contagious. May be disabling when at sites of pressure (Fig 25)

5. *The hyperhidrotic foot"* (sweaty feet) Vasomotor instability mottled color play increased sweating and malodor Associated with mild to severe eczematous changes, predisposes to fungous or bacterial infection, and to contact dermatitis.

6. Less common, but frequently misdiagnosed and mistreated

   (a) *Papular syphilids of soles.* Suspect dry indurated papules (Fig 23)

   (b) *Psoriasis.* Dry scaly patches or chronic papulopustules and crusting (Fig 20)

   (c) *Lichen planus* Dry papules or plaques.

   (d) *Erythema multiforme.*

Avoid Making a Snap Diagnosis of "Ringworm" on Eczematous Eruptions of the Feet Many of Them Are Not Fungous Infections, and Strong Treatment Increases Disability Look for Secondary Pyogenic Infection It May Be Fulminating and Dangerous. Any Eczematous Process on the Feet, Once Well Established, Tends to Become Chronic, and to Predispose to Skin Disease Elsewhere on the Body Most of the Eczematous Skin Diseases of the Feet Can Be Prevented by Adequate Hygiene and the Use of Foot Powder

Dermatoses of Hands

In the differential diagnosis of eruptions of the hands and forearms, certain general considerations are of practical value. These are (1) the hands are subjected daily to traumas and a wide variety of simple and complex chemicals having sensitizing or irritant properties. (2) The skin in this region is undergoing repeated changes in its pH and loss of its fat from contact with soap and other cleansing agents. (3) The hands are a frequent site of eruptions due to substances absorbed by the blood stream from a fungous bacterial, or eczematous dermatitis on the feet or from an infected focus within the body (4) The hands are repeatedly subjected to contact with pathogenic organisms. (5) The hands are often the site of marked vasomotor changes and hyperhidrosis. These "conditioning" factors are of more than theoretical importance and indicate some of the reasons for the chronicity and rebelliousness to treatment of chronic eczematous and infectious dermatitis of the hands, and for difficulties which are encountered in classifying them exactly It is of importance to recognize and treat eruptions of the hands as soon as they appear the longer the lesions persist, the more intractable and disabling they become It is to be emphasized that conditions on the hands are in many ways similar to those on the feet, and that many eruptions favor both hands and feet When the hands are affected, always examine the feet, and vice versa

The most common skin diseases of the hands and forearms are

1 *Contact dermatitis* Tends to occur more commonly on the backs rather than the thick skin of the

palms, though this is not invariable. In any acute or chronic dermatitis of the hands, consider a contact irritant, especially one of occupational origin (Figs. 29 30)

2. *Recurrent vesicular* or *vesicopustular* eruptions, on palmar surface and along sides of fingers particularly. Often related to dermatophytosis of feet ("id") Commonly diagnosed "ringworm," though fungi rarely found. Not infectious to other men except perhaps in tropical climates (Figs. 33, 34) Excessive sweating is a common accompaniment.
3. Acute and chronic *pyoderma*. Impetigo Secondary infection of eczema. Infected fissures. Paronychial infections (Figs. 28 34, 39)
4. Scabies Papules, blisters, crusts, scales, burrows in interdigital spaces, on palms and flexor surfaces of wrists. Frequently secondarily infected. Suspect scabies if an impetiginized process of hands or wrists itches (Fig 32)
5. *Erythema multiforme*. Palms and backs of hands, wrists, and elbows. A highly characteristic lesion (Figs. 35, 36) (see pp. 237 239)
6. Chronic patchy *eczema* of unknown cause—nummular eczema—coin-shaped eczema (Fig. 31) (see p. 170)
7. *Warts* (verrucae)
8. *Fungous infections*. Erythematous, more or less circinate scaling patches. Usually on dorsum of hands and on palms. Relatively common in semitropical and tropical climates. Unusual in temperate climate. Response to fungicidal treatment measures helpful in diagnosis. Look for the fungi (see p. 203)

9 Various distorting *affections* of *nails* including

(*a*) *Psoriasis* Pitting thickening striation separation of free border Tends to involve all the fingernails, though sometimes in varying degree (Fig 1)

(*b*) *Fungous infections* All fingernails not involved as a rule (Fig 38)

(*c*) Changes in growth *secondary* to disease of surrounding tissues eczema pyogenic infection, injury warts

(*d*) *Trophic* and *metabolic* changes. The finger nails are subject to a variety of disturbances for which no definite etiology is determinable or as a result of nerve or trophic changes (pressure from cervical ribs leprosy syringomyelia chronic fluoride poisoning etc)

10 Also of general importance are

(*a*) *Papular secondary syphilis* palms (Fig 37)

(*b*) *Ulcers* at portal of entry of various systemic infections primary syphilis tularemia, sporotrichosis inoculation tuberculosis.

Ringworm of the Hands Is Rare in Temperate Climates. Inflammation Due to Absorption from Eczematous Ringworm of the Feet Is Fairly Common (Dermatophytid) Look at the Feet as Well Always Consider a Contact Factor in Any Eczematous Eruption of the Hands and Forearms. Soap? Work? Clothing (Wool Dermatitis of Wrists) Look for Scabies or Impetigo Look for Underlying Dryness of the Skin or Excessive Sweating

Head and Neck (see Figs. 43-56)

The skin of the head and neck has certain peculiarities of physiology and is subjected to factors of mechanical and allergic irritation which give rise to a predominance of a few types of dermatoses in this region. (1) A heavy concentration of sebaceous glands on the face and scalp Disturbance in their functions contributes to a variety of lesions. (2) The repeated trauma of shaving, with possible added irritation from application of soap and lotions. (3) The constant carrying of irritants and allergens to the face through the almost universal habit of repeated touching of the face, eyelids, etc., by the hands. (4) Exposure to air-borne allergens, with retention of them by excessive oil on the skin and by moisture about the eyes and mouth. (5) Vasomotor instability in the "flush" areas of the face, with subsequent rosacea. (6) Poor hygiene of the scalp, with retention of dirt, scales, bacteria, and occasional parasites. (7) Excessive exposure to wind and sun.

The common dermatoses of the head and neck are

1. *Acne* (Fig 43)
2. *Impetigo* staphylococcic or streptococcic. Particularly on oily skins. Easy to cure with local sulfonamide therapy if treated early but sometimes prone to chronic follicular infection if allowed to persist (Fig 45)
3. Recurrent *herpes simplex* A lifelong virus infection, often with a balance between virus and local immunity which is delicate and easily disturbed by respiratory infections, elevations of body temperature, exposure to sun and wind, and food or drug allergens. Most common about the lips (Fig 47)

9 Various distorting *affections* of *nails* including
- (a) *Psoriasis* Pitting thickening striation separation of free border Tends to involve all the fingernails though sometimes in varying degree (Fig 1)
- (b) *Fungous infections* All fingernails not involved as a rule (Fig 38)
- (c) Changes in growth *secondary* to disease of surrounding tissues eczema pyogenic infection injury warts.
- (d) *Trophic* and *metabolic*" changes. The finger nails are subject to a variety of disturbances for which no definite etiology is determinable, or as a result of nerve or trophic changes (pressure from cervical ribs, leprosy syringomyelia, chronic fluoride poisoning etc.)

10 Also of general importance are
- (a) *Papular secondary syphilis* palms (Fig 37)
- (b) *Ulcers* at portal of entry of various systemic infections primary syphilis, tularemia, sporotrichosis inoculation tuberculosis.

Ringworm of the Hands Is Rare in Temperate Climates. Inflammation Due to Absorption from Eczematous Ringworm of the Feet Is Fairly Common (Dermatophytid) Look at the Feet as Well Always Consider a Contact Factor in Any Eczematous Eruption of the Hands and Forearms. Soap? Work? Clothing (Wool Dermatitis of Wrists) Look for Scabies or Impetigo Look for Underlying Dryness of the Skin or Excessive Sweating

unk and Upper Extremities (see Figs. 40–42, 57–58, 61–72)

The common skin diseases affecting the trunk and pper extremities include

1. *Pityriasis rosea.* Oval lesions along lines of cleavage (see Fig. 63 and p. 268)
2. *Tinea versicolor.* Common. Symptomless. Yellow to brown maculopapules and plaques, principally on upper portion of trunk. Often leaves temporary depigmentation on healing after exposure to sun (Fig. 62)
3. *Miliaria* ("Prickly Heat") (Fig. 61). Small erythematous papules occurring after sweating in warm environment. Sometimes small, thin-walled pustules. Most often seen in men with
4. *Seborrheic dermatitis.* With oily skin. Always examine scalp. Most marked involvement in presternal and interscapular regions; sometimes involvement of axillae and groins, behind the ears, sides of nose, etc. Often associated with
5. *Acne.* Upper portion of trunk, tops of shoulders (and face) (see Fig. 9)
6. *Psoriasis* (see Figs. 1, 57, 58, 59)
   Toxic erythemas and exanthemas. Measles, German measles, chickenpox, scarlet fever, smallpox.
8. Early cutaneous *syphilis.* The macular roseola of syphilis often indistinct and must be looked for. Mottling from vascular reactions to changes of temperature on undressing becomes weaker, less apparent, when patient is allowed to stand for a while; the roseola of syphilis tends to become more pronounced on standing unclothed.
9. *Scabies.* Particularly axillae, umbilicus, belt line,

4 *Seborrheic dermatitis* Scalp, nasal folds, chiefly Greasy scaling with frank erythema (inflammation) and dermatitis in some patients Distinguish from the dry flaky scale of the ichthyotic skin the treatment differs
5 *Contact dermatitis* Plants occupational chemicals, shaving soaps and lotions, etc. (Fig 46)
6 Chronic *follicular infections* Beard and scalp Trauma of shaving and ingrown hairs (Fig 48)
7 Acute or chronic effects of *wind* and *sun*
  (a) Sunburn and true physical allergy to light.
  (b) Premature aging Degenerative atrophic alterations senile keratoses and epitheliomas.
8 *Measles varicella* and *variola*
9 *Epithelioma.*
10 *Rosacea* Flush areas. Sometimes with acneiform lesions Often made much worse by iodide or bromide ingestion. Sometimes associated rosacea keratitis.
11 *Pediculosis capitis (very uncommon in Negroes)* Suspect it as a cause of posterior cervical adenopathy
12 Papular and papulopustular cutaneous early *syphilis* (Fig 44)
13 A miscellaneous group of less common but often medically important dermatoses
  (a) *Lupus erythematosus* Usually of chronic discoid type (Fig 56) Acute disseminate type uncommon
  (b) *Bromoderma* and *iododerma* Sebaceous glands a common shock' site (Chap. XIV)
  (c) *Alopecia areata* and toxic" *alopecia* (Fig 54)

fected on the penis. May serve as portal of entry for syphilis or any other venereal infection. Therefore *examinations for syphilis*, etc., must be carried out for several months (at least four) after appearance of herpes.

5 *Scabies* Pruritic papules, often in linear arrangement, on penis, often somewhat inflamed and indurated. Scabies and genito-infectious diseases often coexist. Therefore examine as under 4.
6. *Pediculosis pubis*. Often acquired venereally
7 *Pruritus ani*. Always worse under conditions of poor hygiene. Look for fissures, crypts, or other anorectal lesions. Suspect pinworm infestation, "ringworm," *fungous infections, psoriasis, seborrheic dermatitis*, as possible factors.
8. *Fungous infection* (tinea cruris)
9 *Seborrheic dermatitis* of crural folds (intertrigo) and hairy suprapubic region.
10 Miscellaneous, less common lesions. Infected sebaceous cysts of penis. Granuloma inguinale. Lichen planus. Tuberculosis. Late syphilis. Epithelioma. Psoriasis.

Mouth (see Figs. 14 87–95)

Diseases of the mouth are, quite properly usually first seen and cared for by the Dental Corps of the armed services. Dentists should train themselves in the recognition of those conditions which may be of general medical significance and which may present lesions elsewhere on the body The mouth is a frequent site of external evidences of general infections, e.g., syphilis is a good indicator of certain vitamin deficiencies, particularly of the components of the B-complex is subject to chronic

buttocks, and above gluteal cleft (see Figs. 12, 68 82)

10 *Contact dermatitis* and *eczematous ids* Tendency to localize at sites of friction with clothing Frequently precipitated by *infected* eczematous eruptions elsewhere on body (see Fig 71)

11 *Herpes zoster* Grouped, tense vesicles, or grouped crusts in unilateral neural distribution (Fig 10)

12 *Fungous infections (tinea circinata)* Red to bronze-red patches. Tendency to peripheral activity with clearing in center Buttocks and thighs are common sites. Occurs more frequently in tropical and semitropical climates. *Look for fungi in scrapings* (see p 203)

Anus and Genitalia (see Figs. 75–86)

The lesions which are encountered most frequently in the region of the anus and genitalia are

1 Early *cutaneous syphilis*
2. *Chancroid.*
3 *Lymphogranuloma venereum*

(The differential diagnosis of genito-infectious diseases on the basis of the objective signs is *not possible* with certainty Photographs of various conditions have been included for the sake of completeness, but no stress has been placed on morphologic differentiation of these diseases. The essential procedures for diagnosis are outlined on page 354 (see also special *Army and Navy venereal* disease directives and circulars for details))

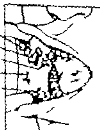
4 *Herpes progenitalis* Recurrent grouped vesicles which often become crusted and secondarily in-



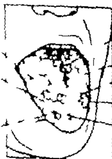
Vermilion border of lips



Mucous surface of lips



Buccal surface of cheek



The tongue

Fig. 14.—Common lesions of lips and mouth.

trauma from biting food dentures, and smoking and shows *concomitant involvement* with a variety of skin and internal diseases The common diseases of most importance to the medical officer are

1 *Aphthous ulcers* Recurrent, painful, discrete areas of infection.
2 *Syphilis* Chancre and mucous patches. Often not recognized immediately A dangerous source of accidental infection of the dental operator
3 *Geographic tongue* A recurrent, changeable, temporary loss of papillae. Harmless, not amenable to treatment. Usually symptomless, but may be a source of "lingual neuroses"
4 *Gingivitis* May be simple and of no importance, or severe, and indicative of a vitamin deficiency or general medical disease (*e.g* leukemia, dysvitaminosis, poisoning with dilantin sodium etc.) or a local infection (herpes virus, Vincent s infection etc.)
5 *Leukoplakia*. The chief *pre*malignant lesion of the mouth.
6 *Trauma from cheek biting* Often a tic which is exaggerated by nervous strain
7 Various dermatologic conditions. Lichen planus (p 268) lupus erythematosus (p 269) drug eruptions (p 307) pemphigus (p. 284)
8 The very important oral changes often associated with systemic diseases These include the glossitis of pernicious anemia, the hemorrhagic lesions of leukemia, etc and many others that cannot be detailed here but which are adequately reviewed in the general literature.



Certain dermatoses rarely or never affect the mucous membranes of the mouth (excluding the vermilion border of the lips) These include psoriasis, seborrheic dermatitis, acne and other diseases of the pilosebaceous apparatus, contact dermatitis, eczema and atopic dermatitis, dermatitis herpetiformis fungous infections and their "ids" erythema nodosum erythema induratum and other tuberculids, impetigo and other superficial pyodermas

Photographs of Dermatoses of Commonly Involved Sites



Fig 1 —Typical chronic dermatophytosis of feet. Note involvement of interspaces and undersurface of toes. Miliary vesicles and scaling of sole (George M MacKee)



Fig. 16.—Severe disabling acute dermatophytosis. Vesicles and severe itching. Strong local medication or x ray therapy in ring worm of this severity may induce explosive eczematous outbreaks (ids) on the hands or other parts of the body (Carmen C Thomas)



Fig. 17.—Subacute vesicular dermatophytosis of sole. Lesions of this type, if unruptured, extend under the thick skin to form large coalescing bullae (John H. Stokes)

Fig. 18.—Chronic infected fissure (pyoderma). Streptococci recovered in pure culture. Often mistaken for ringworm. Note absence of involvement of interspace. This type of lesion is often made worse by strong remedies for ringworm (John H. Stokes)

Fig 19.—Recurrent pruritic contact dermatitis from footwear No evidence of fungous infection on repeated culture. Note that dermatitis is most marked at sites of greatest contact with shoes. Treat as for contact dermatitis, not ringworm (John H. Stokes)



Fig. 20.—Psoriasis of soles. Not a common localization but frequently confused with secondary syphilis or ringworm. The palms may also be involved (George M. MacKee)



Fig. 21.—Acute streptococcic pyoderma (impetiginous dermatitis) complicating chronic dermatophytosis. Note pustules on flaring erythematous base with beginning superficial ulceration. Usually responds promptly to local sulfonamide therapy (John H. Stokes)

Fig 19.—Recurrent pruritic contact dermatitis from footwear No evidence of fungous infection on repeated culture Note that dermatitis is most marked at sites of greatest contact with shoes. Treat as for contact dermatitis not ringworm (John H Stokes)



Fig. 20.—Psoriasis of soles. Not a common localization but frequently confused with secondary syphilis or ringworm. The palms may also be involved (George M Mackee)



Fig. 21.—Late papular secondary syphilis (George M MacKee)



Fig 22.—Ulcerating pyoderma in diabetic on background of chronic dermatophytosis (left foot) and trauma from shoe (right foot) (John H Stokes)



Fig. 22.—Late papular secondary syphilis (George M. MacKee)



Fig. 22.—Ulcerating pyoderma in diabetic on background of chronic dermatophytosis (left foot) and trauma from shoe (right foot) (John H. Stokes)



Fig. 23.—Grouped plantar warts. Painful and sometimes disabling. Especially difficult to cure when located on pressure point or associated with orthopedic abnormality (John H. Stokes)



Fig 24 —Eczematous streptoderma. Diffuse superficial infection of site of mechanical irritation by footwear Early recognition and treatment essential to cure lesion of this type on feet may become extremely chronic and disabling (John H Stokes)



Fig. 27.—Acute contact dermatitis (poison ivy) Note numerous vesicles and bullae. In this patient a marked exacerbation occurred following treatment with injections of poison-ivy extract (John H. Stokes)

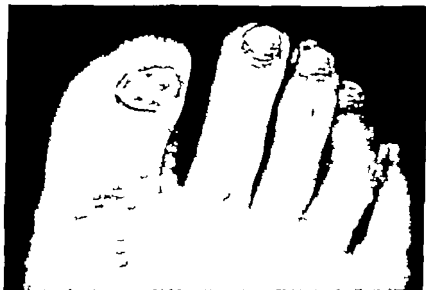


Fig 26—Fungous infection (ringworm) of toenails. Thinning friability flaking Note absence of paronychial inflammation Chronic often incurable with present methods of treatment (John H. Stokes)

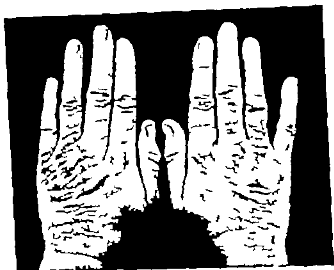




Fig. 23.—Chronic contact eczema occurring on dry (ichthyotic) skin. Soap was the chief irritant in this case. Note fissuring, thickening, and lichenification. Note freedom of palm; this is often an indication of contact causation in eczema of the hands (John H. Stokes)



Fig 28.—Impetiginization of contact dermatitis. It is important to recognize and treat a complicating infectious factor early (John H. Stokes)



Fig 31.—Chronic nummular (coinlike) eczema of hand, with secondary streptococcal infection (John H. Stokes)

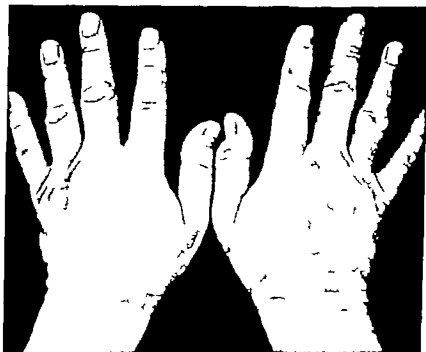


Fig 30 —Chronic contact eczema in physician, due to sensitivity to rubber gloves. Cured by changing to synthetic surgical gloves. The patient had received a large amount of futile local treatment before the cause was discovered (John H Stokes)



Fig 31.—Chronic nummular (coinlike) eczema of hand, with secondary streptococcal infection (John H. Stokes)



Fig 32—Scabies of interdigital space of hand See Fig 12 for other sites of scabies (George M MacKee)



Fig. 33.—Chronic recurrent vesicular eczema associated with marked excessive sweating. Note highlights in photograph from perspiration on fingers. A clammy dripping hand, worse in warm weather or under conditions of nervous tension (John H Stokes)

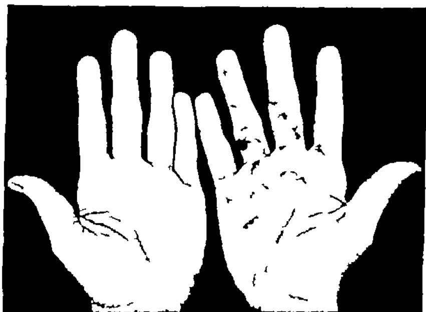


Fig 34.—Vesicopustular streptococcic pyoderma of hands associated with excessive sweating (John H Stokes)



Fig. 53.—Typical erythema multiforme. Annular lesions and varying color changes. This patient had suffered seasonal spring recurrence for many years. Inquire regarding drug ingestion; look for general medical disturbances (John H. Stokes)



Fig. 36.—Erythema multiforme Involvement of elbows in same patient as Fig 35. Note annularity and scaling centers of larger lesions (John H Stokes)

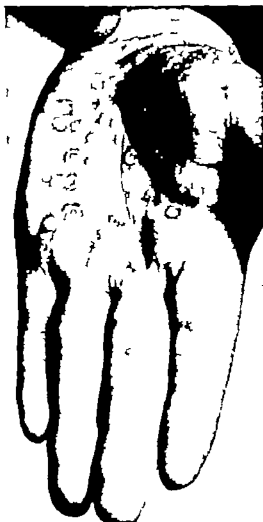


Fig. 37.—Early cutaneous syphilis of palm. Always suspect syphilis in dermatoses involving the palms. (George M. MacKee)



Fig. 38.—Ringworm of the fingernails. Three of the nails are normal (John H Stokes)



Fig. 29.—Chronic paronychial infection. May be due to pyococci or yeasts (Monilia). Intermittent acute exacerbations. Made worse by contact with soap and water or by repeated mild trauma. (John H. Stokes)

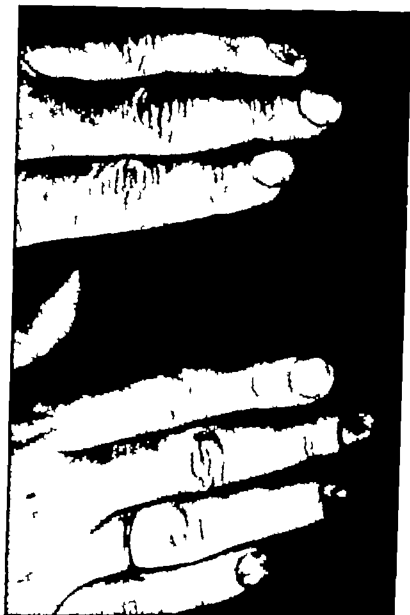


Fig 38.—Ringworm of the fingernails. Three of the nails are normal (John H Stokes)



Fig. 30.—Chronic paronychial infection. May be due to pyococci or yeasts (Monilia). Intermittent acute exacerbations. Made worse by contact with soap and water or by repeated mild trauma. (John H. Stokes)

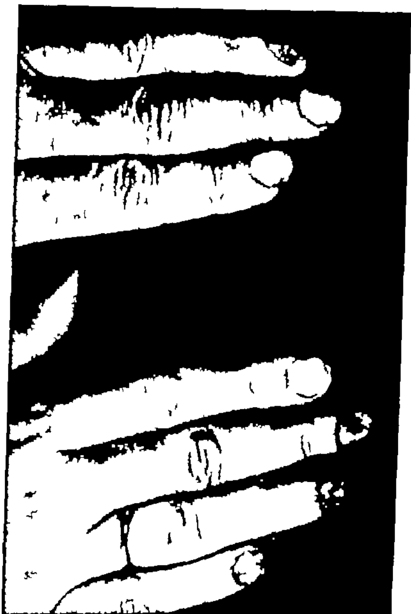


Fig 38.—Ringworm of the fingernails. Three of the nails are normal (John H Stokes)



Fig 41.—Lichen planus of forearm. Flat, angular violaceous papules. Often involves buccal mucous membranes and penis (John H Stokes)



Fig 40—Acute contact dermatitis from adhesive tape Inquire regarding possible sensitivity before applying ext n i e adhesive tape dressings (I S Ravdin)



Fig. 43.—Typical moderately severe acne. Blackheads, inflammatory papules, pustules, scarring. Acne of this degree ordinarily requires ray therapy to vert severe permanent scarring (Louise E Tavs)



Fig 42.—Acute id of forearms following injection of staphylococcus ambotoxoid. Typical of acute eczematous eruptions due to a hematogeneously distributed ubstance absorbed from an ec rematous focus elsewhere on the skin or from an internal focu of infection (John H. Stokes)

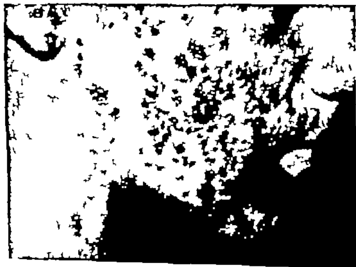


Fig. 45.—Impetigo contagiosa (George M MacKee)



Fig 44—Papular secondary syphilis. Take routine serologic tests for syphilis (George M MacKee)



Fig. 47.—Herpes simplex (George M MacKee)



Fig 46.—Contact dermatitis. Probably due to shaving lotion (George M MacKee)



Fig. 49.—Acute superficial folliculitis of scalp and bearded region. Note lymphadenopathy. Becomes deep-seated and chronic if not treated promptly.



Fig. 48.—Chronic sycosis of beard; chronic often resistant to treatment, and disabling (Carmen C Thomas)



Fig. 1—Acute variola-like eruption in patient with chronic atopic dermatitis. Superimposed infection, probably due to virus, possibly that of herpes simplex. Explosive skin and systemic reactions may be produced in men with atopic dermatitis by the injection of bacterial, fungous, or virus antigens (John H. Stokes)



Fig 50.—Chronic impetiginized seborrheic dermatitis. Principally involves scalp ears bearded region, and margin of eyelid (note loss of lashes) The eruption was of many years duration in this patient. A cure was finally obtained by prolonged administration of sulfathiazole and injections of staphylococcus ambotoxoid (John H Stokes)



Fig. 12.—Herpes zoster supra-orbitalis. Note severe destructive changes in skin. Corneal ulcers were present. Note sharp margination at midline of forehead. This is most important type of zoster because of keratitis and possible loss of vision (Louise E. Tavs)



Fig. 52.—Chronic otitis externa. An eczema with recurrent pyogenic flare-ups. Rule out middle ear disease. Note flakes of dandruff in hair; seborrhea is a frequent accompaniment of this type of eczema. (John H. Stokes.)



Fig. 64.—Acne keloid. Keloidal scars at site of chronic folliculitis of nape of neck. More common in Negroes. Treatment not essential. (Carmen C. Thomas)



Fig 54.—Alopecia areata. Complete loss of hair in sharply cut lined patches; no inflammation or scaling Not due to syphilis. Treatment probably useless, but prognosis for regrowth of hair usually good (Carmen C. Thomas)



Fig. 55.—Acne keloid. Keloidal scars at site of chronic folliculitis of nape of neck. More common in Negroes. Treatment not essential (Carmen C. Thomas)



Fig 54.—Alopecia areata. Complete los of hair in sharply out lined patches no inflammation or scaling. Not due to syphilis. Treatment probably useless, but prognosis for regrowth of hair usually good (Carmen C. Thomas)



Fig. 37 —Psoriasis. Profuse eruption of small lesions (Army Medical Museum)



Fig 56.—Chronic discoid lupus erythematosus. Always study patient for evidence of systemic involvement (John H Stokes)



Fig. 59 —Psoriasis of knee. A Small, sharply outlined lesions and, B, large plaque (Army Medical Museum)

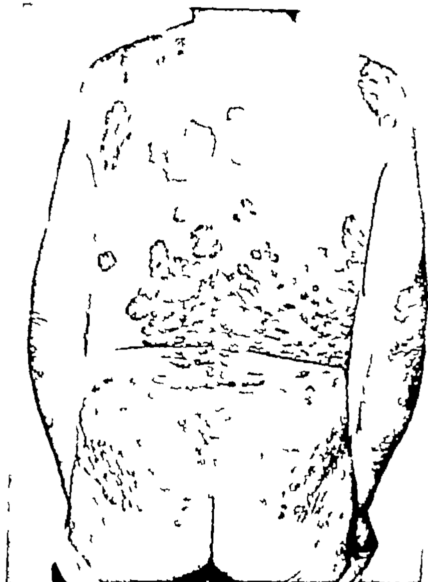


Fig 58.—Psoriasis. Large coalescent plaques. Note clearing of center of annular patches on upper back (John H Stokes)



Fig. 61.—Miliaria (heat rash). Widespread case. A common cause of much discomfort and partial disability in men working in warm environments, particularly men in the tropics, cooks, and crews of submarines, engine-rooms, or tanks, etc. (Army Medical Museum)



Fig. 60.—Chronic circumscribed eczema of knee (circumscribed lichen simplex or neurodermatitis) This process is perpetuated by scratching (Army Medical Museum)

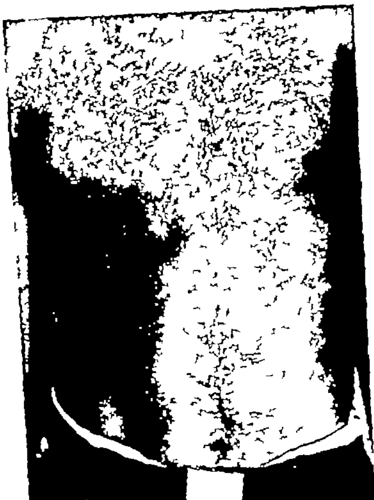


Fig. 61.—Miliaria (heat rash) Widespread case. A common cause of much discomfort and partial disability in men working in warm environments, particularly men in the tropics, cooks, and crews of submarines, engine-rooms or tanks, etc. (Army Medical Museum)

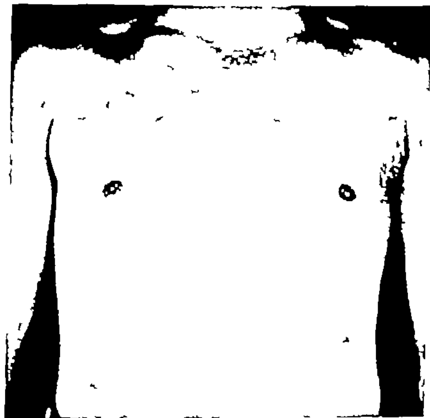


Fig 62—Tinea versicolor The darker areas are the involved sites (John H. Stokes)



Fig. 63.—Pityriasis rosea. Note the oval lesions (Army Medical Museum)

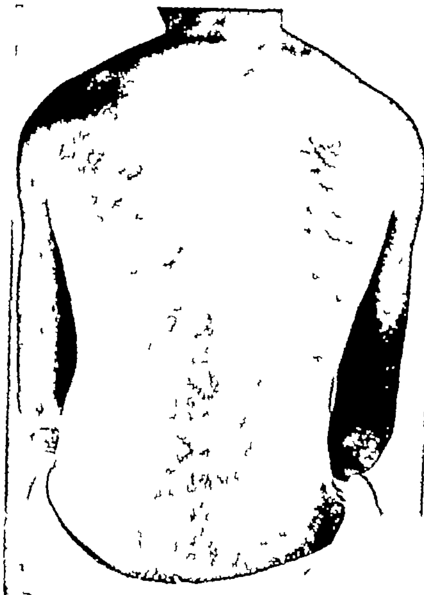


Fig 64.—Dermatophytid resembling pityriasis rosea Followed an acute dermatophytosis of feet (Carmen C Thomas)



Fig. 68.—Variola (Army Medical Museum)



Fig 66.—Herpes zoster Note tense grouped vesicles (C. S. Wright)



Fig. 67.—Molluscum contagiosum. A highly characteristic virus infection. Note umbilication (Army Medical Museum)



Fig 68.—Scabies. Involvement of this extent occurs chiefly under conditions of poor hygiene such as may be encountered on small ships isolated outposts and in sailors on long cruises or soldiers on combat duty (George M MacKee)

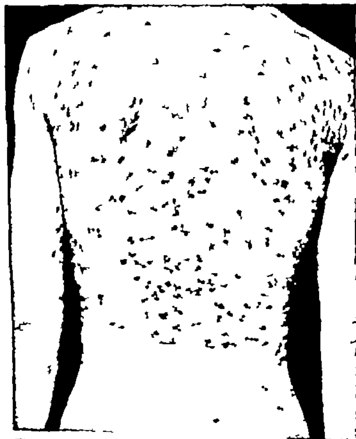


Fig. 69.—Florid papular early cutaneous syphilis (George M. MacKee)



Fig. 70—Papular early cutaneous syphilis. The red areas of tattoos are usually spared owing to the antispirochetal action of cinnabar (mercury sulfide) (George M MacKee)



Fig. 71.—Extensive dermatitis of sudden onset. Usually associated with an eczematous focus elsewhere on skin. May follow infected chigger bites or contact dermatitis from weeds or clothing. Eczematous explosions of this type sometimes follow administration of sulfathiazole by mouth to patients with localized infected eczema, especially *if the original eczema has been treated for several days by the local application of sulfathiazole ointment.* (John H. Stokes)



Fig 72.—Tertiary syphiloderm. Nodulo-ulcerative gumma of forearm. Note individual nodules arciform configuration peripheral extension healing of center (Army Medical Museum)



Fig. 73.—Ichthyosis. Milder grades of this condition are common and are frequent causes of the persistence of eczematous dermatitis (Army Medical Museum)

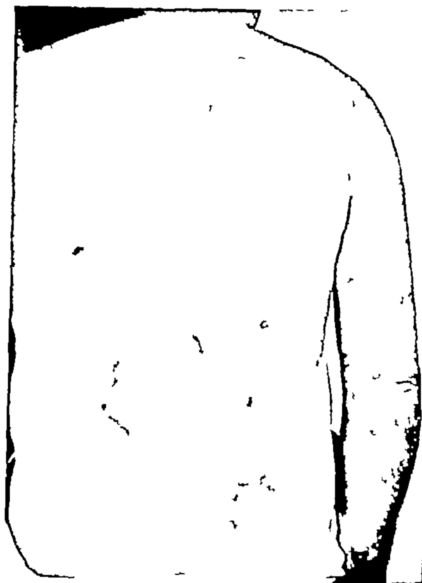


Fig 74.— Flash burn from exploding gases. Note bizarre linear outlines (U S Naval Hospital, Brooklyn)

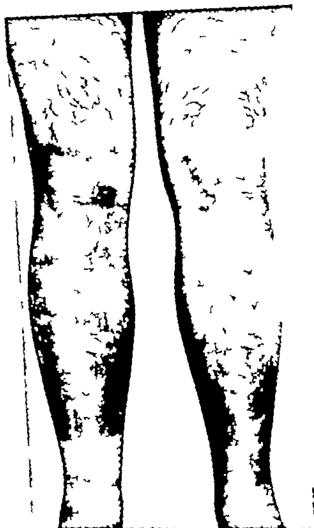


Fig. 74a.— Flash burn (same patient as Fig. 74) Note sharp demarcation where skin was protected by even one very thin layer of clothing (U S Naval Hospital, Brooklyn)

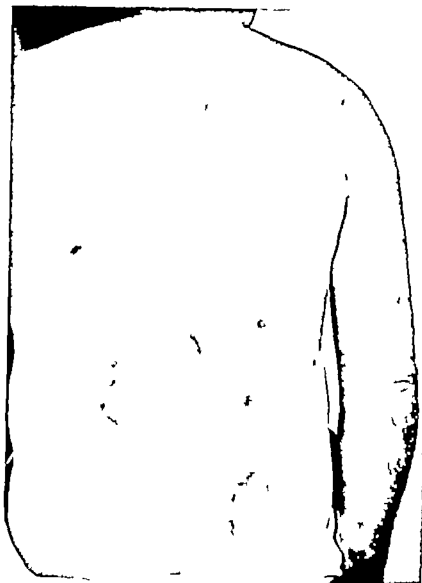


Fig 74 — Flash" burn from exploding gases. Note bizarre linear outlines (U S Naval Hospital, Brooklyn)



Fig. 76.—Chancroid (John H. Stokes)



Fig 75 —Chancre (John H Stokes)



Fig 78 —Granuloma inguinale (Leishman-Donovan bodies present) (George M MacKee)



Fig. 77—Lymphogranuloma venereum The small evanescent primary lesion has disappeared (George M MacKee)



Fig 80—Annular early cutaneous syphilis. Always examine posterior aspect of scrotum (John H. Stokes)



Fig. 79.—Late secondary syphilis. Always suspect a relapsing infection in lesions of this type. (George M. MacKee)

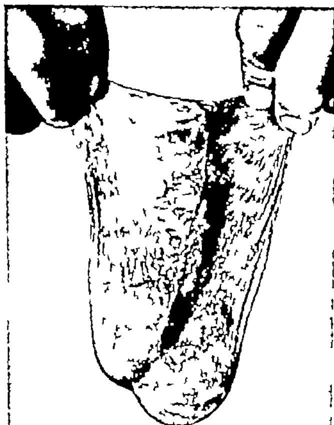


Fig. 80—Annular early cutaneous syphilis. Always examine posterior aspect of scrotum (John H. Stokes)



Fig 81.—Psoriasis of genitalia. The diagnosis of psoriasis in this region must be supported by the absolute exclusion of possible lesions of venereal disease (George M MacKee)



Fig. 83.—Lichen planus. Note annular lesion and flat, shiny papules (Army Medical Museum)



Fig. 84.—Fungous infection (tinea cruris) (Army Medical Museum)



Fig 85.—Granuloma inguinale resembling condylomata lata of secondary syphilis (Louise E Tavs)



Fig. [illegible].—Orificial tuberculosis of anus. The patient also had pulmonary tuberculosis (John H. Stokes)

Fig. 87—Aphthous ulcers (Thomas J Cook)



Fig 63.—Chancre of hard palate, right molar region. Biopsy with bare-handed technic had previously been done on this patient. Always examine for the regional lymph node enlargement which almost invariably accompanies extragenital chancre (Thomas J Cook)



Fig 89 —Chancre of upper lip (Army Medical Museum)



Fig. 90.—Geographic tongue—of no importance whatever *Do* not call to patient's attention if discovered incidentally in examination; he may develop lingual neurosis (Thomas J Cook)

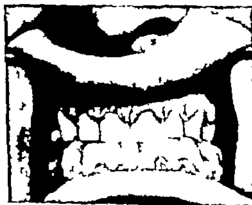


Fig 91.—Simple gingivitis. Common; ordinarily responds to simple dental hygienic measures. If persistent, look for dietary or medical causes (Thomas J Cook)



Fig 89 —Chancre of upper lip (Army Medical Museum)



Fig. 94.—Leukoplakia of tongue. Old syphilis, excessive smoking may be contributory. Suspect malignancy. Biopsy and destroy all papillomata and ulcers. Well-established, diffuse malignancy of the tongue is an almost hopeless therapeutic problem (Army Medical Museum)

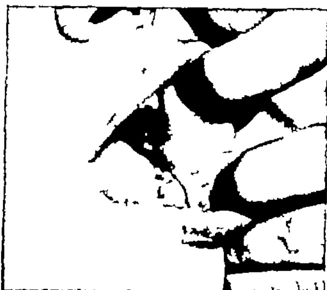


Fig 92.—Trauma from cheek biting (Thomas J Cook)



Fig. 93.—Lichen planus. White reticulate lesions often confused by the inexperienced with leukoplakia. Does not usually respond to treatment even when the skin lesions do (Thomas J Cook)

CHAPTER V

PRINCIPLES OF LOCAL TREATMENT

THE treatment of skin diseases embodies all the principles of general medicine and surgery plus the technics of local, direct treatment of the lesions. Due to the accessibility of the cutaneous lesions, the special technics of local treatment have been extensively developed and controlled by many millions of observations and all the vast experience in this field tends to stress what is still the fundamental dictum of all treatment *"First be sure to do no harm."*

TABLE 1.—FOUR PRINCIPLES OF LOCAL TREATMENT

1. First use only the mildest and simplest remedies. Strong remedies and high concentrations are indicated only when the diagnosis is certain and clearly indicates the necessity for antiparasitic, anti-eczematous, keratolytic, counterirritant, or other specific action.
2. The ppearance, site, and stage of the lesion (acute, swollen, blistered, oozing, crusted, thickened, torpid, etc.) usually determine the nature of the local treatment (Table 2)
3. The more inflamed and acute the skin condition, the milder should be the remedies used.
4. The choice of the suitable vehicle, and the manner of pplication and removal, are often as important as the selection of active medicaments.

Throughout the following, the remedies are listed in the approximate order of mildness. The first listed are the most mild, and should be tried first wherever possible and in acute, highly inflamed conditions, treatment should generally be limited to the first mentioned members in each group. Certain measures are obviously not

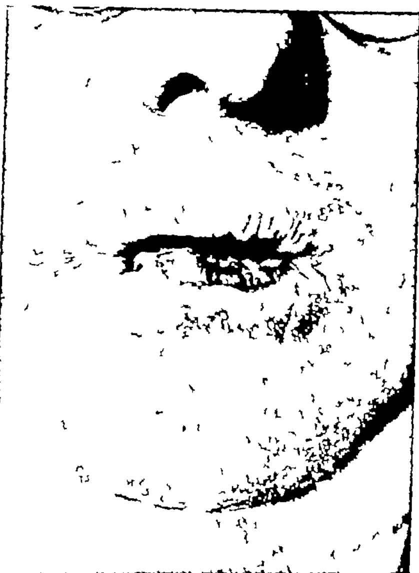


Fig 95.—Epithelioma developing on leukoplakia of lip in an inveterate pipe-smoker (John H Stokes)

INDICATIONS FOR CHOICE OF FORMS OF TOPICAL APPLICATIONS*

Third Choice	Fourth Choice	Fifth Choice
Pastes: Advantages Allow small amount of secretion to pass; protective, soothing Disadvantages: Less permeable, less cooling than first two; must be applied with bandages	*Emulsions:* Advantages: Easy to apply; softening, protecting, soothing Disadvantages: Occlusive and heating; greasy and "messy"	*Salves and Creams (Particularly "Cold Creams" and Absorbent Creams):* Advantag S ft ening, soothing remove scales and crusts Disadvantages: Same as emulsions, but to even greater degree
Salves and Creams: Advantages: Softening, lubricating; remove scales and debris penetrating, active (parasiticidal ingredients) Di d antag Greasy 'messy heating, often require bandaging, etc.	*Emulsions:* Advantages Same as salves, but sometimes less penetrating Disadvantages Same as salves, but better in generalized conditions, as no dressings are required	
Emulsions: Advantages: Easily pplied, fairly penetrating, can contain keratolytics, parasiticidal medicaments, etc. Disadvantages Same as mentioned previously	*Lotions:* Advantages Easily applied, can contain keratolytics, parasiticidal medicaments, etc. Disadvantages. Superficial action, not effective as cleansers or in removing scales, etc.	
Salves Advantages. Softening, soothing, penetrating Disadvantages Difficult to pply; greasy messy require hours devoted to dressings; may be heating or irritating and have too much penetration		

Based on a table in Dermatologic Therapy in General Practice. Year Book Publishers.

† For formulas see ℞ 35 and ℞ 39 Appendix.

TABLE 2.—CLINICAL CHARACTERISTICS OF DERMATOSES AS

Order of Choice of Form of Applications	First Choice	Second Choice
Characteristics of Dermatoses.		
1 Acute swollen, angry red, vesiculating or oozing dermatoses	*Wet Dressings.* Advantages Anti inflammatory· allow passage of secretions, etc. Disadvantages Difficult and tedious to apply	*Shake Lotions and Newer Emulsion Bases (Water Miscible)*† Advantages. easy to apply cooling and anti inflammatory· allow certain degree of passage of secretions Disadvantages (of lotions) drying sometimes uncomfortable not as anti-inflammatory as wet dressings
2. Subacute or chronic, less angry dermatoses	*Shake Lotions and Newer Emulsion Bases (Water Miscible)*†: Advantages Anti inflammatory easy to apply, allow passage of certain amount of secretion and exudation Disadvantages Drying, not penetrating	*Pastes.* Advantages. Anti-inflammatory soothing allow secretions to pass fairly well when bandaged on, have some penetration Disadvantages: More difficult to apply often necessitate bandaging· not penetrating or softening
3 Dry scaly thickened and deeper conditions	*Ointments and Salves and Newer Emulsion Bases (Water Miscible)*†: Advantages Remove scales and crusts penetrating· can incorporate active medicaments Disadvantages Greasy messy heating, often require bandaging	*Pastes* Advantages. Same as ointments, but to lesser degree less impermeable and heating than ointments Disadvantages Not as softening or penetrating as ointments
4. *Generalized or widespread eruptions of all kinds*	*Shake Lotions and Newer Emulsion Bases (Water Miscible)*† Advantages Easily applied, clean best in most acute and subacute conditions Disadvantages May tend to cake on oozing areas may be too drying· may not have enough soothing or penetrating action	*Emulsions:* Advantages Easily applied, softening Disadvantages Cannot be used in ambulatory cases—too greasy and messy; may be too heating or too penetrating (toxic ingredients)

2. Apply oils and ointments containing keratolytic drugs which dissolve the horny substances (salicylic acid, etc.)
3. Macerating and occlusive hot wet dressings.
4. Macerating and keratolytic adhesive plasters.
5. Direct painting with strong keratolytic agents such as acids or caustics.
6. Mechanical scraping or use of abrasive agents.
7. Surgical removal of tissue or debris.

EXTERNAL REMEDIES

Many external applications have in common the effect of protecting the skin from changes of temperature, from dusts and vapors, mechanical and chemical irritation, and from infections.

There are *twelve common forms of external treatment* (Table 2) (1) baths (2) wet dressings (3) poultices (4) powders (5) shake lotions (6) emulsions or liniments (7) tinctures (8) ointments, salves, creams, and oils (9) pastes (10) fixed dressings (11) plasters (12) direct application of chemicals or of physical agents.

Baths

Cleansing Baths.—This form is employed to remove accumulated dirt, crusts, scales, and the adherent remains of previous medication. A temperature of 95 to 100 F is generally effective and agreeable. In cases in which soap does not prove irritating cleansing is best accomplished by washing the affected parts with a soft cloth and with lather made by the copious use of a not too highly scented, ordinary white soap which should contain less than 0.12 per cent of free alkali. Soaps made from tallow and corn oil are generally less irritating than those of cocoanut oil, olive oil, whale oil, or sesame

feasible in military practice under field or combat conditions.

CLEANSING

When a lesion is crusted, profusely scaly or covered by previous medication it may be necessary to cleanse before applying new treatment. However an irritable skin should not be further irritated by too drastic cleansing It is often better to remove only those crusts, scales, or residual medicaments which come off easily and to avoid rough irritating cleansing measures. In general, pyodermas (p. 221) acnes (p. 245) and greasy oily skins (seborrheas, p 264) require and will tolerate rigorous cleansing On the other hand, dry ichthyotic skins (p. 368) itchy skins, eczematous lesions (particularly of the hands) and acute inflammations (athlete s foot, etc.) will evidence varying degrees of intolerance to soap, water and cleansing

Cleansers

1 Wash with warm water or soap and water
2. Clean with modern soapless detergents (examples are cited in the following material under "Cleansing Baths, p 135)
3 Sop or bathe with a solution of peroxide of hydrogen or of boric acid
4 Wet dressings (see p 139)
5 Soak or bandage with grease or oil or soft ointments (see p 149)

Torpid thickened, and *chronic lesions* can be cleansed by more vigorous methods

1. Scrub with a brush hot water and soap (tincture of green soap for example)

2. Apply oils and ointments containing keratolytic drugs which dissolve the horny substances (salicylic acid, etc.)
3. Macerating and occlusive hot wet dressings.
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oil. Soap may be replaced by Acidolate, Dreft, Drene, Pragmol, Tersus, ℞ 58 ℞ 59 These modern detergents are useful, particularly when the skin is badly soiled with oily or greasy material After thorough soaping and washing the soapy water must be completely removed by careful and repeated rinsing first by a warm spray followed by a cooler spray The patient should leave the tub and dry the skin immediately by *patting* with clean, soft towels *rather than by rubbing* The room should be of such temperature that the patient feels neither chilled nor overheated.

It is usually advantageous to apply topical remedies immediately after the bath

Medicated Baths.—In most cases, warm baths are more serviceable and are tolerated better than cold. In treating patients with baths containing volatile medicaments like tar and sulfur good ventilation of the bathroom should be assured. Weak and aged patients and those with cardiovascular or vasomotor affections may otherwise go into syncope. When the patient complains of weakness or dizziness, exposure of an extremity to the cooler air or application of an ice-bag to the head usually affords immediate relief Exposure to draughts after bathing must be avoided

Full length baths are conveniently estimated at about 160 to 250 liters (40 to 60 gallons) for adults 25 to 30 liters is estimated for a sitz bath and 5 to 10 liters for a foot or hand bath. The *quantities of medicinal additions* are based on these quantities of water

Cornstarch bran or *oatmeal baths* are used for their soothing action in generalized and itching dermatoses.

For cornstarch baths stir ¼ to 1 pound refined soluble cornstarch into a tubful of water (Starches are made soluble through hydrolysis, for example, by boiling.)

For the bran bath, prepare a cheese cloth bag containing ½ to 1 pound wheat or oatmeal bran. In filling the tub, first allow very hot water to run over and through this bag and then complete the filling of the tub with water at a suitable temperature. Place the bag in the tub, and squeeze the bag occasionally or use it as a washcloth.

Tannic acid baths are valuable when an astringent effect is desired 200 to 300 cc. (7 to 10 ounces) is added to a full-length bath.

Potassium permanganate baths are often effective in cases of exudative, vesicular and bullous eruptions (generalized eczema, etc.) pyodermas and superficially infected dermatoses. Potassium permanganate acts as a disinfectant and, by its oxidizing effect, helps to dry exuding areas and acts as a deodorant in foul-smelling surface affections. Toughening and tanning of the skin also result.

Completely dissolve 5 to 15 gm. (1 teaspoonful to 1 tablespoonful) potassium permanganate crystals (or fifteen to forty five 5-grain tablets) in 1 quart of water have several quarts of solution in reserve, using 1 quart to each tubful of water. *If the chemical is incompletely dissolved contact with the skin will result in a burn.* Remember that potassium permanganate produces staining of the tub. In larger hospitals, a single tub should be reserved for these baths.

Sulfur baths have limited usefulness as an adjunct antiparasitic treatment of pyodermas and of certain seborrheic conditions. Sulfur externally applied, acts as a mild fungistatic, an antiseborrheic agent, a keratolytic, a parasiticide, an irritant, or stimulant to the skin, and as a general disinfectant. Liquor calcis sulfuratae N.F (Vleminckx' solution) 150 to 200 cc. potassium sulfuret (liver of sulfur) 1 hand ful or zinc sulfate 20 to 40 gm (1 to 2 ounces) is used for an adult tub bath.

Tar baths are antipruritic in cases of generalized itch ing dermatoses and in generalized eczemas and psoriasis. The patient may be painted with a tar preparation (e g solution of coal tar liquor picis alkalinus N F., liquor carbonis detergens) and placed in an ordinary bath Or the tar may be dissolved by stirring into the water about 100 gm. (3 ounces) liquor carbonis detergens (solution of coal tar N F)

Cleansing and washing of the hairy scalp and other hairy areas follow the principles of the general cleansing bath Scalps which tend to oiliness, dandruff scaling or crusting often require thorough shampooing with soap from once every four or five days to once every ten days or two weeks Tincture of green soap or one of the "tar shampoos may be used

The individual response is the determining factor both as to the measures used and as to the manner and frequency of use. It is often advantageous to reduce exposures to soap and water and to other detergents whenever the skin and especially that of the hands, is dry or af fected by irritated, eczematous or other dermatoses.

However it is rare to find an otherwise normal young person whose skin will not tolerate soap. In older persons

the tendency to true dryness of the skin is not uncommon, and many middle-aged and older persons must actually dispense with the use of soap.

In these cases, other methods must be adopted, *e.g.*, cleansing with mineral or olive oil, with a soft cream or salve, or with various soap substitutes (p. 136)

Wet Dressings

Wet dressings are one of the most useful forms of dermatologic treatment (see Fig. 96)

1. They are among the most efficacious means of cleansing the skin of adherent crusts and debris.
2. They constitute an excellent measure for maintaining drainage of infected areas, *e.g* furuncles, infected ulcers, etc.
3. They are effective vehicles for local application of heat.
4. They can be used to macerate the skin surface and thus to effect keratolytic action.
5. They prevent rapid changes of temperature at the skin surface and, perhaps for this reason, often stop itching burning and pain.
6. They are among the most effective agents for relieving superficial inflammation.
7. They tend to open blisters and to bring medication to the bases of eroded or ulcerating areas.

Rules for the Application of Wet Dressings.—The following rules must be closely observed in the application of the dressings

1. *The solutions of choice are*
   (a) Fresh milk (in emergency)

(b) Physiologic or slightly hypertonic saline solution
(c) Liquor aluminii acetatis (Burow's solution) 1 20
(d) Boric acid solution (3 per cent, saturated)
(e) Potassium permanganate solution, 1 400 to 1 10 000 in water *freshly prepared*
(f) Silver nitrate solution 0.25 to 1 per cent
(g) Liquor calcis sulfuratae, 1 10 to 1 30
(h) Potassium sulfuret (liver of sulfur) 1 teaspoonful to from 1 quart to 1 gallon of water

2 *Solutions for wet dressings* should be prepared in a cleanly fashion with sterile water When the ingredient is itself a disinfectant, clean tap water may be used

3 *Four methods of application are*
(a) Hot and open dressings (b) cold and open dressings, (c) hot dressings closed or protected from evaporation, (d) cold dressings closed or protected from evaporation.

4 With the open dressing frequent changes are necessary Evaporation may lead to a gradually increasing concentration of the drug Evaporation itself has a cooling effect.

5 Closed dressings are more macerating and less cooling but less frequent changes are necessary

6 Open dressings are used when there is conscientious help and when the skin is much inflamed infected or itching

7 Closed dressings are used in the ambulatory or unattended patient and on the less acute, less infected lesion or when *superficial maceration* is desired

8. Coverings for closed wet dressings are. oiled silk, rubber dam, paraffin paper cellophane, etc.
9. Every *form* of wet dressing must be kept *wet*. Most failures are due to neglect of this rule.
10. Use of soft piece of unstarched sheeting napkin, pillow case, or white shirting folded six to eight ply and cut to fit the area. Do not be stingy in the amount of solution or thickness of the cloths. Do not use absorbent cotton or gauze next to the skin. Absorbent cotton packs down too tight and becomes hard and dry at the surface. Gauze will not hold the moisture well, is usually too widely meshed, and sometimes tends to irritate because of the coarse surface and loose ends.
11. Wring out a wet dressing to the point of being "soppy" but not "running"
12. A hot wet dressing can be a little drier and a good deal thicker than a cold one, unless a hot-water bottle or pad is used. Remember that evaporation cools.
13. A wet dressing, whenever covered with an ice-bag, must be watched to prevent freezing effects. Use four to six to eight layers of the wet cloths. Do not use salt solutions.
14. Two methods of keeping the dressing wet are
    (a) Pouring the solution over the cloths after removing the outer bandage and protection. This can be done only with closed wet dressings and *only while they are still wet*.
    (b) Complete removal and reimmersion or change of dressing This is usually the better method

All old "surveyed" and "condemned" sheets, linens, etc., can be put to good use in the department of dermatology and syphilology of military hospital.

of course, the dressing must be changed completely if the lesion is infected.

15 Do not pour the solution under one corner of the dressing in the hope of wetting it. Do not pour the solution over the outside of a wet dressing which has, through neglect, become dry it does not penetrate, or if it does, it carries dirt.

16 Do not "wet-dress" more than one-third of the body at any one time. Be cautious about chest, neck, and arms, particularly in old people (pneumonia)

17 Protect the patient against chilling

18. Anoint the surface from which a wet dressing has been permanently removed, using a bland oil or ointment.

19 Do not allow detritus to collect. Clean the skin gently with gauze, oil or even soap and water or best of all wash gently with a cloth made wet with the solution used in the wet dressing at least once in twenty four hours.

20 Do not needlessly macerate the normal *surrounding* skin Protect it with a grease or a thick, powdery lotion.

21 Make the patient comfortable while the dressings are being applied.

22. Whenever possible keep a basinful or two of the solution next to the patient's bed or chair

23 Put a rubber or other impermeable covering of sufficient size under the part being dressed to protect the underlying chair or bedding If the dressings are properly kept wet, there is sure to be some dripping

In most instances it is useless to require that the patient apply the wet dressings himself If the patient has

no one to apply the dressings for him, *acute conditions of the hands and feet scrotum, anus buttocks etc., can often be treated best by soaking in basins containing the respective solutions.*

So-called *sitz-baths* are a substitute for wet dressings in such regions as the anus, scrotum, and perineum.

The duration of application may vary from continuous wet dressings lasting many days (furuncles of the upper lip, sweat gland abscesses of the axillae) to wet dressings lasting only a half-hour and applied each morning and evening, as in certain cases of eczematous dermatitis of the hands.

Unless interruption is strictly contraindicated, it is usually best to allow the patient to interrupt the wet dressing after a half hour to an hour then to resume after a brief respite. During the interval, a lotion or other topical medicament may be applied. It is often inadvisable to use a grease, thick ointment, or paste as the interval application, for the grease may for some time prevent the subsequent aqueous application from reaching and acting on the skin.

In many forms of topical dermatologic therapy a *properly trained and conscientious nurse or hospital corpsman is essential to proper management* This is nowhere more apparent than in the seemingly simple, but actually tedious, delicate and often difficult procedures which are necessary to insure the correct action of wet dressings.

Poultices

Poultices are usually applied hot. They have effects similar to those of *covered* hot wet dressings. They represent an effective and somewhat easier way of maintaining a more or less constant application of moist heat.

They are particularly useful in treating boils and abscesses.

One of the oldest forms is the *flaxseed* poultice. The flaxseed is cooked and placed in small linen bags. Several of these bags are prepared and kept warm, so that the poultice can be changed when cooling occurs.

Another excellent poultice is one made with *starch* and *boric-acid powder* prepared as follows

> Mix together in a small dish 1 tablespoonful of ordinary laundry starch powder and 1 heaping tablespoonful of boric-acid powder Make a paste by adding 2 tablespoonfuls of cold water Then add to this paste, while constantly stirring half a standard measuring cupful of boiling water The quantity of water is important, and it must boiling for proper hydrolysis. In measuring the starch use as nearly a level tablespoonful as possible when the starch is in lumps, it is impossible to make the quantity absolutely exact. There are many kinds of starch, but as they do not hydrolyze alike, not all of them make good poultices. Cornstarch is excellent for this purpose. Well-hydrolyzed starch gels and may be applied warm or cold

Typed, printed, or written directions for preparing the poultices should be made available.

To avert drying and sticking of the edges, the under margins of *the poultice may be smeared with simple* ointment or with olive oil Cellophane or oiled silk may be employed to enclose the poultice. To prevent the poultice from drying too fast, one may add a little glycerin to the water (Montgomery)

Wet dressings can be kept hot by covering them with a hot poultice or with a heat-producing device like a hot-water bottle or a small electric pad. In treating localized infections it is often desirable to confine the heat to the affected site, as it is the *local* hyperemia which produces the most benefit. When using electric pads, it is essential to use only those properly insulated for this special purpose and to guard against short-circuiting as a result of the moisture.

Powders

Powders are most conveniently used in the treatment of the *skin folds* (intertriginous areas interspaces between the toes, in the groins, between the buttocks, etc.) On a dry skin, powders protect from the irritation of air and friction and also exert a cooling effect.

Powdering of the interdigital spaces of the feet and the liberal use or powder in the shoes and socks or stocking is one of the best measures for sweaty feet and for the prevention of recurrences of superficial fungous infections including "athlete's foot" (see Chap. VII)

Different substances are selected because of their respective qualities. Thus, zinc oxide and talcum are clean, white, and somewhat absorbent kaolin and bentonite are highly absorbent. Powdered boric acid, sulfur zinc peroxide, sulfathiazole, etc., have disinfectant and anti parasitic properties powdered tannic acid is astringent and antiperspirant powdered menthol and camphor are hygroscopic, cooling, and antipruritic.

Mixtures of these powders are prescribed according to the indications of the particular site affected and dermatosis.

To make a powder "stick," add small *quantities* of

lanolin (0 1 per cent to 5 per cent) to make it have 'slip, add starches, lycopodium zinc stearate, etc. Color in the form of cinnabar ochre, calamine, etc., can be blended and mixed with the powders if required

Lotions (Shake Lotions)

Shake lotions sometimes called "paints and "watery pastes," are liquid or semiliquid preparations, usually having as their base water, alcohol, glycerin (or bentonite) or mixtures of these, and containing ingredients in solution or suspension or both.

These lotions represent a modified form of application of powder They offer a convenient form of application and are preeminently useful in treating widespread dermatoses, generalized eczemas, acne, and a great variety of both localized and disseminated eruptions. (In ambulatory practice, a lotion will be prescribed about three times as frequently as a salve.)

Active medicaments can be added as required Antipruritics (*e.g* menthol 0.2 to 1 per cent phenol 0.2 to 1 per cent camphor 0.2 to 1 per cent benzocaine 3 to 10 per cent liquor carbonis detergens 3 to 20 per cent) may be embodied in the original formula Or parasiticides and keratolytics *e g* resorcin 2 to 6 per cent and precipitated sulfur 2 to 10 per cent ichthyol 2 to 10 per cent or red sulfide of mercury (cinnabar) 1 to 2 per cent may be added, either alone or in combination (see the list of active ingredients, Appendix) Coloring matter or the colored medicaments listed above may be used and blended according to the tint desired (cuticolor lotions)

About 8 ounces of shake lotion is required to cover the entire body of an adult. Lotions are applied with a soft, clean, flat paint brush In general, the deposit left by the

lotion *need not be washed off* entirely before every application but it is unwise to allow a thick layer of lotion or the thickened remains of a lotion, exudate and debris to remain too long on the skin. These deposits sometimes constitute new sources of irritation. As a rule, the skin should be gently cleansed about once daily using moistened gauze sponges or cloths soaked in water oil, or some mild antiseptic solution (*e.g* boric acid) In removing lotions from larger areas, immersion in a basin or bath is advisable.

Shake lotions are frequently the most effective vehicle for protecting the skin from external chemical or physical injuries. This, coupled with the many variations which may be obtained by varying the nature and the ratios of the inert and active ingredients—and especially the convenience of application and of removal of these preparations—make the *shake lotion one of the most valuable vehicles used in topical treatment.*

Nevertheless, shake lotions are not without disadvantages. Some patients and certain areas do not tolerate them. Sometimes lotions prove to be too drying, or irritating because they become crumbly in most intertriginous sites. Moreover shake lotions leave a white or colored deposit which constitutes an impediment to their use, particularly during the day and on exposed areas. Furthermore, certain skins will not tolerate the cleansing procedures necessary for removing the lotion.

Shake lotions do not penetrate as well as do ointments, for example. But this relatively superficial action is not always disadvantageous. Many dermatoses (*e.g* eczema, seborrheic dermatitis) affect primarily the uppermost layers of the skin and in these conditions the therapeutic effects should be confined, if possible, to the superficial

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most all active therapeutic agents which can be put into lotions, and many others which can be put into ointments, can be embodied in emulsions as well. The drying effects of lotions are avoided to some extent, and the difficulties of applying ointments (e.g., the bandaging which is usually necessary) are also obviated.

Tinctures

Tinctures are solutions of active ingredients in alcohol, ether chloroform, or other organic solvents. They are particularly useful when it is desired to confine the treatment to circumscribed areas or in applying non-water-soluble medicaments under conditions in which salves are contraindicated. Other advantages of tinctures are their ease of application and relative lack of messiness. There is some absorption of the medicaments embodied in tinctures. Although this absorption is probably less than that of certain salves, many tinctures probably have a more penetrating effect than is generally supposed (e g tincture of iodine, tar tinctures, tincture of gentian violet, tinctures of various mercurials, tinctures of chrysarobin, etc. see Appendix)

Ointments (Salves) Creams and Oils

Salves and oils are among the oldest preparations of dermatologic therapy and are still among those most generally used. The fatty substances which constitute the basis of most salves and oils may be divided into two categories (a) animal, vegetable, and (b) mineral.

Whereas many of the animal and vegetable fats (benzoinated lard, mutton fat, lanolin, cocoa butter) are useful, the mineral fats are in some respects superior (paraffin, petrolatum, liquid petrolatum) Mineral greases are

tissues and to the protection from external irritants which shake lotions afford. It must be remembered that active medicaments which penetrate through the skin represent potential dangers because of possible systemic and toxic effects. Thus generalized dermatoses or large areas can often be treated with impunity with shake lotions containing ingredients which might be dangerous if like concentrations were embodied in salves.

Even with lotions, some absorption takes place. Systemic effects can occur and even deaths have been attributed to the application of toxic substances in shake lotion form. The epidermis of some persons does not seem to have the same degree of *impermeability* and resistance to penetration as that of most normal adults. It is necessary therefore, to bear in mind the *possibility of systemic effects* when applying even in shake lotions, remedies containing such agents as tars, resorcin, or other phenolic substances, benzocaine, and mercurials. *Double caution* is necessary when such remedies are applied to large areas or in infants or young children.

Emulsions or Liniments

Emulsions or liniments are oily or fatty substances emulsified and suspended in an aqueous or other liquid or aqueous solutions suspended in an oily or other dispersing medium

Examples are Carron oil (linimentum calcis—an emulsion of linseed oil and lime water) and the calamine emulsion of the National Formulary or the new emulsions produced with higher alcohols and wetting agents (℞ 58, ℞ 59)

In some respects liniments and emulsions constitute a form of transition between lotions and ointments. Al

most all active therapeutic agents which can be put into lotions, and many others which can be put into ointments, can be embodied in emulsions as well. The drying effects of lotions are avoided to some extent, and the difficulties of applying ointments (e g the bandaging which is usually necessary) are also obviated.

Tinctures

Tinctures are solutions of active ingredients in alcohol, ether chloroform, or other organic solvents. They are particularly useful when it is desired to confine the treatment to circumscribed areas or in applying non-water-soluble medicaments under conditions in which salves are contraindicated. Other advantages of tinctures are their ease of application and relative lack of messiness. There is some absorption of the medicaments embodied in tinctures. Although this absorption is probably less than that of certain salves, many tinctures probably have a more penetrating effect than is generally supposed (e g tincture of iodine, tar tinctures, tincture of gentian violet, tinctures of various mercurials, tinctures of chrysarobin, etc. see Appendix)

Ointments (Salves) Creams and Oils

Salves and oils are among the oldest preparations of dermatologic therapy and are still among those most generally used. The fatty substances which constitute the basis of most salves and oils may be divided into two categories (a) animal, vegetable, and (b) mineral.

Whereas many of the animal and vegetable fats (*benzoinated* lard, mutton fat, lanolin, cocoa butter) are useful, the mineral fats are in some respects superior (paraffin, petrolatum, liquid petrolatum) Mineral greases are

usually preferable because they do not become rancid and also because of their greater resistance to the growth of bacteria. On the other hand, some of the animal fats (*e.g.*, lanolin) have the property of holding large quantities of water. This permits the incorporation not only of water but of numerous medicaments which can be dissolved in water. The newer cholesterol and other "lipoid" bases, as well as creams prepared by emulsifying greases through addition of emulsifying agents (*e.g.*, triethanolamine, sodium lauryl sulfate, and the water miscible jellies—tragacanth pectin bases, etc.) combine the advantages of holding large quantities of water and of not becoming rancid.

Ointments have properties which are not present to an equal extent in other forms of application. First is the aforementioned and often valuable capacity to penetrate. Second, soft ointments bring medication into most intimate contact with the surface of a lesion. Third, soft ointments and oils serve *to soften—at least temporarily—the surface of the skin as well as the crusts, scales,* and detritus on the skin surface. In this manner ointments and oils remove adherent pathologic alterations on the skin surface and permit medicaments to reach the tissues beneath. Fourth, ointments, greases, and oils enable the physician to use many valuable therapeutic agents which are fat or oil soluble but not water-soluble and which could not, therefore, be advantageously embodied in lotions.

Ointments which contain lanolin or similar substances with water added or which consist of other forms of water-in-oil or oil-in-water emulsions are now generally called *creams*. The water-in-oil creams, through evaporation, often exert a cooling effect similar although definitely

inferior to that of wet dressings. This type is often called a "cold cream.

Ointments are often contraindicated on oozing areas and on infected lesions where drainage is required, probably because the impermeable greasy layer impedes exudation, sweating, and evaporation at the skin surface. Moreover greases often produce folliculitis if applied to hairy areas. In general, ointments are little used on hairy parts, except on the scalp. However the new soft-water miscible emulsion bases are excellent for treating the scalp and other hairy areas (℞ 14, ℞ 58, ℞ 59)

Undeniable disadvantages of ointments are their unsightly appearance, general "messiness" and difficulty of proper application, especially in cases of extensive dermatoses and in ambulatory patients.

In modern dermatology the water-miscible emulsion bases are in many respects superior to ointments, and are gradually superseding the latter as the most effective measures in certain dermatoses, including various thickened chronic eruptions, diseases of the scalp, ichthyosis, psoriasis, seborrheic dermatitis, and dry scaly or hyperkeratotic forms of eczema or ringworm.

Dressings and Bandages.—When using ointments, it is generally necessary to consider the problems of bandaging and dressing The many different forms of dressings and of nursing technics cannot be detailed here. However the following brief descriptions may prove of some assistance in the application of simpler forms of dermatologic dressings.

General Principles of Dressing and Bandaging.—First, decide on the effect desired and, accordingly whether the oil, ointment, grease, cream, or other topical remedy is to be applied thickly or in a thin layer whether it is to

act on the surface or is to be made to penetrate whether the part is to be left uncovered or to be covered.

Bandaging of the movable joints must either be dispensed with or done with such art and skill as to avoid binding chafing and cutting Ointment bandages on the groins or armpits are usually contraindicated but the anogenital regions can sometimes be treated by such a device as a T bandage or menstrual napkin and belt.

The cloth used in dressings should be soft and clean. It is recommended that the *usual surgical gauze be entirely abandoned as material for dermatologic dressings applied directly to the skin.* The first layers of the wet dressings or of the ointment bandage should consist of a *finely woven soft and pliable cotton, muslin or linen cloth* Old sheets, pillowcases, tablecloths, napkins, and white shirting make admirable dressing materials. After removal of all starch and bleaches, and after suitable cutting and folding this soft material is either impregnated with the solution of the wet dressing or evenly covered on one surface with the salve to be applied. It is often advisable to "butter" the skin with a thick or thin layer of salve (Figs. 97 98)

Ointments should generally be removed at least once daily For this purpose, one may use cotton cloths soaked in warm oil or in some other warm or hot cleansing solution, according to the particular case. *Care should be taken not to cleanse irritable skins too vigorously* When using modern ointment bases, which do not become rancid, it is usually preferable to apply new ointment over the vestiges of the old, rather than to risk irritation by the friction incident to thorough cleansing

After the prepared soft cloth has been carefully adjusted and applied *evenly* to the skin, the area is band

aged by superimposed windings of ordinary gauze bandages. Bandages 1, 2 or 3 inches wide are chosen, according to the site and type of dressing. The windings of bandage should have sufficient overlap. The bandages or dressing must not be held in place with adhesive tape applied directly to the skin, as many dermatologic patients are hypersensitive to ordinary adhesive tape. Moreover adhesive is occlusive and tends to macerate the skin surface and reduce resistance to certain superficial infections. If necessary adhesive tape may be placed outside of the gauze bandages to hold the ends in place.

When, through oversight or improper management, bandages and dressings have become dry and adherent, they should not be ripped off but should first be softened by soaking in oil or hydrogen peroxide solution, or mixtures of these, or by soaking in other mild antiseptic liquid. The bandages and dressings are then gently removed, layer by layer.

If there is evidence of local irritation, spread of the dermatosis, extension of infection, or systemic effects from absorption, the ointment dressings should, of course, be removed immediately.

Badly soiled or infected dressings should be destroyed. Other dressings may be used again after boiling and thorough washing, meticulous rinsing, drying, and ironing.

In some areas, it is easier and sometimes better to use special, suitable cloth garments in place of the cut-cloth dressing and gauze windings.

1. *Caps.*—A practical stocking cap used in dressing the scalp is made by cutting 6 to 10 inches off the top of a white cotton stocking and gathering and stitching together the cut edges.

2. *Chin and Nose Dressings*—An accepted type of dressing has been referred to as a "four tail bandage" (Figs. 101, 102). It is made by longitudinal slitting of a 3 to 4 feet long, 3 inches wide gauze bandage. The slits start from each end but stop before they reach the middle, leaving 2 to 3 inches of the central portion intact.
3. *Arm and Leg Dressings*—Ordinary white cotton stockings, with the foot cut out, make an excellent cloth dressing. When obtainable, "stockinette" is exceedingly serviceable for dressing to arms and legs.
4. *Foot Dressings*—The bottom of an ordinary, white cotton stocking is cut off about 8 inches above the ankle. The heel up to the instep is cut off. The front and back of the leg of the stocking are slit lengthwise to form two tails which are tied around the leg above the ankle. In bandaging the foot, *it is essential to separate each toe from its neighbors.* A small pad of cotton or preferably of lamb's wool impregnated with the ointment or powder must be placed between the toes.
5. *Hand Dressings*—Oversized, soft white cotton gloves may be used (Figs. 103, 104). The tips of the glove fingers may be cut off to facilitate use of the hand. In treating individual fingers, one can often use a finger cut from the glove and attached by tapes tied around the wrist.
6. *Body Dressings*—When ointment is to be applied to the entire body, a rectangular piece of cloth cut from old sheeting or similar material is prepared. This is folded crosswise in the middle, and at the central point of the fold a round or oval

aperture is cut, through which the head is to be passed. The ointment-covered cloth can then be held in place by tapes sewed to the edges, by careful pinning or by means of a superimposed garment such as a nightgown or pyjama top or thin white cotton pyjamas or gowns may themselves be used as dressing material.

In *generalized dermatoses* the scalp, face, neck, arms, forearms, hands, thighs, legs, feet, perineum, and genitalia *must be dressed separately each with the proper technic of application.*

The use of ointment dressings requires special knowledge and skill, and is often tedious. Furthermore, the correct application of ointment to large areas requires a large quantity of the medicament. Any attempt to save money (or time) by reduction of the amount of ointment to be used at each dressing is likely to result in an increase of expense and prolong the course of the malady

Pastes

In dermatologic language pastes are semisolid preparations consisting of greases which carry in suspension insoluble, finely dispersed powders. Ordinarily a paste contains equal parts of suspended powder and greasy or oily vehicle (see Appendix, II 7) In this respect, pastes correspond to shake lotions and shake emulsions. A paste is thicker drier and more solid than a salve or ointment. The paste and the medicament it carries probably penetrate less deeply than do the soft ointment and its ingredients. *A given ingredient may be two to ten times more active when incorporated in a soft ointment base than when in a thick paste*

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6 *Body Dressings*—When ointment is to be applied to the entire body a rectangular piece of cloth cut from old sheeting or similar material is prepared This is folded crosswise in the middle and at the central point of the fold, a round or oval

o the skin and the structures immediately beneath the skin, and is thus particularly useful in the so-called "varicose complexes" of the legs, including "stasis," eczema, certain forms of ulcers, and pruritus.

Plasters

Plasters consist of masses which will adhere to the skin and thereby fix a piece of cloth or other type of backing material.

Plasters have occlusive and macerating action, and bring medication into close contact with the surface of the skin. They are used particularly when these effects are desired, as in treatment of calluses, corns, plantar warts, and central portions of furuncles and are particularly effective in certain keratoses such as those due to gonorrhea (keratoderma blenorrhagicum) Plasters are often used preliminary to other forms of therapy Medicaments such as mercury salicylic acid, and phenol may be embodied in the plasters. Salicylic acid plasters are effective as keratolytics (R 49)

Direct Application of Chemicals

In certain conditions, chemicals are not first embodied in a vehicle but are applied directly to the skin.

Silver nitrate in crystals, in solution or as a pencil can be used to destroy exuberant granulations to freshen the edges of ulcers, cracks and fissures which are slow in healing to touch the bases of vesicular bullous, or aphthous lesions, etc., and to act as an astringent or styptic.

Trichloracetic acid (saturated solution) is useful in planing down warts, fibromas, xanthelasma, etc. This should be used only by a practiced physician.

There are several reasons why an ointment may irritate and a paste may not. For example, ointments tend to be occlusive, macerating penetrating and heating. Pastes, on the other hand tend to absorb secretions and are generally regarded as being less impermeable, less penetrating less macerating and less heating than ointments. Pastes can, therefore, often be used on acute lesions with a tendency to crusting vesiculation or oozing where impermeable layers of heavy ointments would be harmful Furthermore, a well prepared, dry sticky paste does not always require a bandage or superimposed dressing particularly on a small area, and if a fine powder is rubbed on the surface after application. In many instances it is necessary to bandage on pastes in a manner similar to that used in applying ointments

Table 2 summarizes the more important uses and effects of wet dressings, shake lotions emulsions, ointments and pastes, presenting the approximate order of choice of these five forms of vehicle according to the state of the dermatosis to be treated Fig 100 shows the important contraindications to the use of some vehicles and medicaments in specific localizations.

Fixed Dressings

Fixed dressings are bandages impregnated with material which hardens and stiffens, so that the dressings assume the character of a more or less flexible cast.

The zinc-gelatin bandage,* often called "Unna's boot," is a fixed dressing which may be used wherever a more or less permanent protective dressing is required It is extremely effective in excluding the effects of external irritants, trauma and scratching It also lends support

* Ready-made, easily applied form known as Medicopaste obtainable from Medicosan Co N Y C

dosage cessation and resumption of treatment, combination with local and other measures, special features of site, lesion, or case, etc., must be considered, evaluated, and decided by an expert.

7 X rays are in general contraindicated in

(a) *Lupus erythematosus.*
(b) *Lupus vulgaris.*
(c) *Photosensitivity*
(d) *Senile skins.*
(e) *Moles.*
(f) *Nevi.*
(g) *Dermatoses which have a strong tendency to recur in the same site*
(h) And, of course, in *dermatoses which are known to be refractory to this modality or which are self-limited or which respond satisfactorily to other measures.*

the direction of an expert. No treatments should be given without *special superficial-therapy apparatus*

5 No highly irritated or irritable skin no skin with senile or other atrophic changes, no previously irradiated skin, should be rayed without due consideration of the possible dangers.

6. When the exact dermatologic diagnosis has been established, when the condition is sufficiently severe and protracted, when other measures have been adequately tried without satisfactory results—x ray treatment, under the direction of an expert and with proper precautions, apparatus, and technic, provides the safest, cleanest, and most effective method in a majority of cases of the following diseases:

(a) *Acne Vulgaris.*—Never start on patients who have not tried other treatment, nor on patients who are too young (below fourteen to fifteen years)
40 to 75 r once weekly for a series of six to eight to twelve treatments.

(b) *Seborrheic Dermatitis.*—When refractory to other measures, 40 to 75 r., three to six treatments at weekly intervals.

(c) *Psoriasis* —When refractory to all other measures, 40 to 75 r two to eight treatments at weekly intervals. (Beware of repetition, no matter how severe the recurrences.)

(d) *Thickened, Chronic Eczematous Dermatitis and Lichenified Areas Neurodermatitis Atopic Dermatitis.*—When refractory to other treatment, 75 r three to eight treatments at weekly intervals

(e) *Itching Dermatoses in General, and Pruritus Ani, Scrotal and Perineal Itching Etc* —40 to 75 r three to eight treatments at weekly intervals.

(f) *Carbuncles Furuncles Sweat-Gland Abscesses Other Infiltrated or Moderately Infiltrated Infections* —75 to 150 r once every three days to one week.

(g) *Warts Plantar and Others.*—If small (area not over 1 cm. in diameter) and with surrounding skin carefully shielded, up to 2000 to 3500 r in a single treatment or fractional doses.

All the treatments in the above series may be given consecutively or in interrupted courses.

It is essential that, either at the time of each treatment or at the completion *of a series* a permanent entry be made on the patient's health record giving exact dosage and factors, with meticulous recording of the amount of radiation received by each site. All matters of shielding protection of eyes, gonads etc., contraindications, special

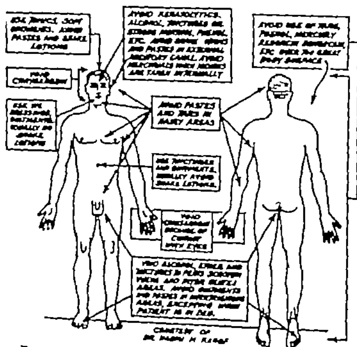


Fig. 100.—Specific localizations and forms of external medication ordinarily indicated or contraindicated (Sulzberger and Wolf: Dermatologic Therapy in General Practice. Year Book Publishers)



Fig 99—Patient applying first coat of shake lotion to right forearm. Sometimes on coating suffices; sometimes two or three are necessary Area after area can be carefully painted in this way until the entire affected part is covered (Sulzberger and Wolf: Derm tologic Therapy in General Practice. Year Book Publishers)

CHAPTER VI

ECZEMA DERMATITIS

(Eczematous Dermatitis, Eczema, Plant Dermatitis, Contact Dermatitis, Atopic Dermatitis, Nummular Eczema)

GENERAL

THE conditions listed above are all superficial inflammatory skin reactions in response to chemical or physical irritants or sensitizers (allergens) or superficial inflammations of unknown cause. As a group they constitute the most commonly encountered of all skin diseases.

Description

Localization.—Any part or parts of the skin or generalized. Most common on the hands (backs) on the feet, arms, legs, face, neck, and other *exposed* parts also on areas subject to *moisture* and *friction* (armpits, groins, feet, etc.) (see Figs. 3, 4, 11 and Table 7)

Acute.—Swelling redness, blisters, denudation, oozing, crusting.

Subacute.—Papules, scaling thickening scratch marks, crusts.

Chronic.—Thickened, leathery skin, hard, dry surface, increased brownish or brownish-blue pigmentation. Pus-crusts and impetiginization signify deep or superficial secondary infection.

Symptoms.—Mild to very severe burning and/or itching

diffuse acute, blistered or weeping subacute scaly and reddened, *circumscribed* or generalized; or chronic, thickened, torpid and pigmented; often sparse and in isolated plaques.

6. *Infected Eczemas or Eczematized Infections*.—Combinations with seborrheic dermatitis, impetigo, folliculitis, boils, running ears, draining sinuses, fungous infections (hands and feet, groin, etc.) (For treatment of these last, see also "Impetigo, "Infectious Eczematoid Dermatitis, Chap. VIII; and Fungous Infections, Chap. VII.)

GENERAL METHODS FOR ALL FORMS OF ECZEMA-DERMATITIS

Simplified Treatment

Acute Vesicular Oozing

1. Whenever possible find and remove causes (almost *always external agents*) by considering localization and by taking careful history of suspicious exposures (Table 7)
2. Wet dressings or soaks whenever possible, ℞ 11 and ℞ 12.
3. Basic lotions and paste base, ℞ 3, ℞ 4, ℞ 7

Subacute

Scaly or slightly thickened, slightly red or papular

1. Basic lotion with menthol and camphor (℞ 3 and ℞ 4)
2. Pragmatar ointment (℞ 14)
3. Boric ointment (℞ 18)
4. Paste base (℞ 7) or ointment base (℞ 18)

Chronic

Thickened, hyperkeratotic, or scaly not red, may be hyperpigmented

Wet dressings and soaks cannot, as a rule be given from the battalion medical chest or to men while on duty with the *Army*. However in the Navy the patient can, as a rule, go to the sick bay or quarters and apply wet compresses or soaks in basins for at least an hour or so each day (see p. 139)

Fever Pain Lymphangitis Lymphadenitis, Etc., Always Indicate Secondary Infection.

Course.—Acute cases can clear up in a few days to weeks Remissions and recurrences are not uncommon. Chronic cases can last for years, with remissions and acute or subacute exacerbations. Some forms are seasonal. In some forms, exacerbations and remissions may depend upon specific external exposures (contact dermatitis) in others, upon environment, climate, occupation, psychic and emotional upsets, etc. ("Atopic Dermatitis," see p 195)

TABLE 4.—SOME COMMON FORMS OF ECZEMA-DERMATITIS

1 *Contact Dermatitis or Contact Eczema.*—Caused by contact with external irritants and especially with substances (allergens) to which the particular skin has become hypersensitive.

The *localizations* are the most important clues in finding causes (see Table 7 and Fig 3)

2. *Atopic Dermatitis.*"—Dermatitis associated with hay fever asthma, etc., in the individual and or family
   (a) Usually dry (unless infected scratched, or maltreated) thickened, scaly often pigmented.
   (b) Usually very itchy
   (c) Usually chronic and difficult to manage (*Severe or chronic f rm is a cause for rejection in armed forces*) As a rule, "dies out" in the late twenties or before
   (d) Usually localized in cubital spaces popliteal spaces, face neck, dorsa of hands, feet (see Fig. 31)

3. *Nummular (Coinlike) Eczema*—Cause unknown.
   (a) Patchy round or oval, crusting scaling or oozing plaques of varying size and number Central healing is common, giving appearance which suggests ringworm to the layman. Not very itchy as a rule.
   (b) Frequently appears on dorsa of hands, *extensor surfaces* of arms, legs thighs, etc., but can affect any part of the skin.
   (c) Chronic and often recurrent course but eventual cure.

4. *Miscellaneous Eczemas" of Unknown Origin.*—Patchy or

Superficial x-ray treatment (p. 159) *is a sovereign palliative remedy for all forms of subacute and chronic eczema-dermatitis*

All such cases which resist local treatment deserve a trial with x-ray therapy properly administered by specially qualified medical officers and limited to absolutely safe dosage (see p. 159)

TABLE 5.—GENERAL INSTRUCTIONS FOR ELEMENTARY PREVENTION OF ALL FORMS OF ECZEMA-DERMATITIS OF HANDS, FEET GROINS*

Impress on all men that they must:

1 *Avoid excessive* use of strong soap, cleansers, etc.
2 *Dry thoroughly* particularly all skin folds.
3. *Wear* properly fitting and properly ventilated shoes, properly fitting clothing, socks, etc.
4. *Use* dusting powder freely after bathing, on feet, in groins, in socks, shoes, etc., and whenever wet and changing clothes.
5 *Not self-medicate* report any blisters, oozing, itching, etc.
6. *Remember* that eczema of feet, or severe eczema of hands, or persistent or widespread or infected or incapacitating eczema of other parts should be treated in dispensary sick bay or hospital.

Apply equally to fungous infections.

SPECIAL, COMMON FORMS

Eczema of the Hands (see also Chap. VII)

Treatment.—In addition to simplified treatment (p. 171)

When Blisters Are Present—Wet dressings, soaks (℞ 11 ℞ 12, ℞ 38) are first choice (see p 189) Shake lotions or pastes (℞ 21, ℞ 23, ℞ 24) may be tried, either in conjunction with or following peeling with, *e g*

		Gm. or Cc.
1	Salicylic acid	24 0
	Alcohol (95 per cent) to make	120 0 or

2. Thymol-salicylic acid solution (℞ 47) or

4 Crude coal tar paste, ℞ 80 or
5 Vioform ointment, ℞ 78, or
6 Pragmatar ointment, ℞ 14, or ℞ 79 or
7 Ichthyol ointment, ℞ 61

In *generalized* subacute or chronic cases, the following emulsions and lotions may be tried

1 Calamine liniment, ℞ 22,
(menthol 0 5 per cent, phenol 0.5 per cent may be added) or
2. Liquor carbonis detergens 5 to 10 per cent (benzocaine 5 to 10 per cent) in ℞ 22, or
3 Antipruritic lotion No. II ℞ 26

In *circumscribed patches*

1 Tar ointments and creams, ℞ 79 ℞ 80 or
2 Crude coal tar paint, ℞ 45 or
3 Crude coal tar 3 to 10 per cent in ℞ 58 or ℞ 59
4 The collodion splint" is a very useful measure in the healing of fissures which often occur in patches of chronic eczema, particularly on the hands. Also assists in healing fissures between the toes, at the angles of the mouth etc. Technic Dry carefully apply layer of flexible collodion directly to fissure then a few *wisps* of cotton are pasted on the collodion followed by another application, more wisps of cotton, etc., until a firm collodion-cotton covering forms over the entire fissure and immobilizes the part (coarse mesh gauze may be used instead of cotton)
Ordinary adhesive tape applied over fissures is also helpful at times.

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5 *Not self-medicate* report any blisters, oozing, itching etc.
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		Gm. or Cc.
1	Salicylic acid	24.0
	Alcohol (8 per cent) to make	120.0 or

2 Thymol-salicylic acid solution (℞ 47) or

3 Whitfield's solution (℞ 50)
Sig Paint on blistered parts twice daily
4 Creams and ointments containing tar and mercury are often helpful—℞ 79 ℞ 80

Some cases (not only of fungous infections but of all types and of all stages of eczema) respond well to the *phenol-camphor mixture* (℞ 48) recommended by Francis for fungous infections *(painted on twice daily)* However some are refractory and some are moderately or severely irritated by this remedy It must be used only under constant medical control, and never covered by bandages or dressings. *Any moisture may cause the mixture to become toxic and irritating* There is *danger* both of local *gangrene* and systemic *poisoning* and regular observations at short intervals are required when phenol is used in this concentration

X ray treatment should be given when necessary

Eczema of the Feet (see also Chap VII)

Hospital Treatment *Acute.*—Elevation of the parts. Soaks several hours daily in basinful of potassium permanganate (℞ 11) of silver nitrate 0.25 per cent (℞ 12) Spread the toes and place a wisp of lamb's wool or cotton in each interspace while soaking Followed by

1. Shake lotions (℞ 21, ℞ 23) or
2. Pastes (℞ 27)

In case of *secondary infection cellulitis* of legs, etc., keep in bed, administer indicated sulfonamide by mouth etc.

After-Care.—When feet are "cured" instruct patient regarding proper foot hygiene. Insist on constant and liberal use of "issue foot powder or powder ℞ 1 b

While up and about, keep toes spread by placing lamb's wool in each interspace and, if sweating is present, daily application of ℞ 35 or ℞ 38, $KMnO_4$ soaks (℞ 11) (x ray treatment may be tried in severe cases, but only by specially qualified and experienced medical officers)

Eczemas of Feet and Hands Often Go Together These Twins Are Not Only the Most Common, but Sometimes the Most Baffling, Most Treatment Resistant, and Most Incapacitating Forms. If There Are Many Recurrences (Despite Treatment Here Outlined, Including X Ray) the Man Is Usually to Be Judged Unfit for Full Military Service (see also Chap. VII)

In Severe, Refractory Recurrent, Blistering Scaling or Pustular Eruptions of Hands and Feet, Look for Foci of Infection between Toes, in Tonsils, Teeth, Etc. Correct These Foci When Possible.

Eczema of the Legs

This condition is common, particularly the chronic form, and in combination with stasis, poor circulation varicose veins, and sometimes ulcers.

Treatment of the circulatory disturbances, injection or ligation of varicosities, is often necessary to cure.

Elevation of the parts wearing of elastic stockings or Ace bandages application of zinc gelatin boots (Unna) are frequently beneficial.

Contact dermatitis from clothing (see Table 7) and infection of the feet and legs (fungi, Chap. VII cocci (Chap IX) are possible contributory factors.

3 Whitfield's solution (℞ 50)
   Sig Paint on blistered parts twice daily
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X ray treatment should be given when necessary

Eczema of the Feet (see also Chap VII)

Hospital Treatment. *Acute.*—Elevation of the parts. Soaks several hours daily in basinful of potassium permanganate (℞ 11) of silver nitrate 0.25 per cent (℞ 12) Spread the toes and place a wisp of lamb's wool or cotton in each interspace while soaking Followed by

1 Shake lotions (℞ 21 ℞ 23) or
2. Pastes (℞ 27)

In case of *secondary infection cellulitis* of legs, etc. keep in bed, administer indicated sulfonamide by mouth etc.

AFTER-CARE.—When feet are "cured" instruct patient regarding proper foot hygiene Insist on constant and liberal use of "issue" foot powder or powder ℞ 1 *b*

Simplified Treatment

1. Wash out with warm oil.
2. Apply ointments
   - (a) ℞ 14, or
   - (b) ℞ 9 or
   - (c) ℞ 10, or
   - (d) ℞ 15.
   - (e) Paint fissures with silver nitrate 5 to 10 per cent, ℞ 12.
   - (f) When irritated, soothe with ℞ 6, 7 16, or 18.

Hospital or Sick Bay Extended Treatment

1. Wash out with mineral oil containing 2 per cent salicylic acid or resorcin 3 per cent in alcohol.
2. Tar ointment (℞ 80)
3. (a) Tar and ammon. merc. cream
   Crude coal tar 3 per cent
   White amm. merc. 3 per cent
   In emulsion ℞ 58 or 59
   (b) ℞ 79
4. Tar and sulfathiazole cream
   Crude coal tar 3 per cent
   Sulfathiazole 3 per cent
   In emulsion ℞ 58 or 59 or
5. Vioform ointment, ℞ 78.
6. *X-rays when necessary*

If Due to a Fungus, Try Placing Cotton Tampon Soaked with Equal Parts of Cresatin (Acetate of Metacresol) and Olive or Mineral Oil. If There Are Signs of Running Ear and Possible Middle-Ear Infection, Consult Otologist.

Eczema of the Scalp

Simplified Treatment

ACUTE OR SUBACUTE.—

1. Remove crusts and scales by soaking with olive or mineral oil (if possible, containing 2 to 5 per cent

Simplified Treatment

1 Bandaging with paste base (℞ 7) in thick layer Remove the superfluous paste gently once daily with oil Avoid soap
2. Painting with thick layer of lotion (℞ 3 or ℞ 4)
3 Treatment of infections of feet (Chap. VII)

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Treatment of underlying local or general circulatory disturbances, varicosities, ulcer by surgical and medical means (see above)
2 Finding of contact agents (Table 7)
3 Treatment of feet.

Locally

1 X rays (in safe dosage by specially qualified medical officer)
2 *Acute Cases*—Elevation and wet dressings (℞ 11 ℞ 12, ℞ 88)
3 *Subacute and Chronic Cases*—
   (*a*) Lotions (℞ 21 ℞ 3 ℞ 4)
   (*b*) Pastes (including zinc gelatin bandage*) ℞ 7 ℞ 79
   (*c*) Bandaging with ointments of tar vioform etc. (℞ 78 ℞ 80 or ℞ 14)
   (*d*) Ace or elastic bandages and other measures to improve circulation

Eczema or Dermatitis of External Auditory Canal

This condition is often combined with *seborrheic dermatitis Treat scalp* (see pp 265–266)

* Ready-made, easily applied form known as Medicopaste obtainable from Medicosan Co., N Y C.

Simplified Treatment

1. Wash out with warm oil.
2. Apply ointments
   (a) ℞ 14, or
   (b) ℞ 9 or
   (c) ℞ 10, or
   (d) ℞ 15.
   (e) Paint fissures with silver nitrate 5 to 10 per cent. ℞ 12.
   (f) When irritated, soothe with ℞ 6, 7 16, or 18.

Hospital or Sick Bay Extended Treatment

1. Wash out with mineral oil containing 2 per cent salicylic acid or resorcin 3 per cent in alcohol.
2. Tar ointment (℞ 80)
3. (a) Tar and ammon. merc. cream
   Crude coal tar 3 per cent
   White amm. merc. 3 per cent
   In emulsion ℞ 58 or 59
   (b) ℞ 79
4. Tar and sulfathiazole cream
   Crude coal tar 3 per cent
   Sulfathiazole 3 per cent
   In emulsion ℞ 58 or 59 or
5. Vioform ointment, ℞ 78.
6. *X-rays when necessary*

> If Due to a Fungus, Try Placing Cotton Tampon Soaked with Equal Parts of Cresatin (Acetate of Metacresol) and Olive or Mineral Oil. If There Are Signs of Running Ear and Possible Middle-Ear Infection, Consult Otologist.

Eczema of the Scalp

Simplified Treatment

ACUTE OR SUBACUTE.—

1. Remove crusts and scales by soaking with olive or mineral oil (if possible, containing 2 to 5 per cent

salicylic acid) or ℞ 14 If necessary clip hair short.

2 Treat infected cases with soaks with 0.25 to 1 per cent silver nitrate (℞ 12) or 1 9000 potassium permanganate (℞ 11)

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Apply water-soluble emulsion creams, either with or without tar mercurials, etc.
   (a) Crude coal tar 3 per cent
   Amm. mercury 3 per cent
   Salicylic acid 3 per cent in ℞ 58 or ℞ 59 or
   (b) ℞ 79
2 Soft ointments. ℞ 14
3 Apply soft ointments with mild disinfectant action e.g ℞ 9 or ℞ 18 or ℞ 18 and 15 mixed in equal parts.
4 Salicylic acid 2 to 3 per cent in ℞ 18, or
5 Vioform ointment. ℞ 78.

> In Eczema or Pyodermas of Back of Neck Ears, Back of Ears, Think of Pediculosis Capitis, and Look for Lice or Nits! (Chap XV)

CHRONIC.—

1 Tar emulsion creams and soft ointments
   (a) Crude coal tar 3 per cent
   Ammoniated mercury 3 per cent
   Salicylic acid 3 per cent
   In emulsion base ℞ 58 or ℞ 59 or

(b) ℞ 79 or

(c) ℞ 68.

If resistant, a few small doses of x rays (one to four treatments, once weekly one-eighth skin erythema dose) may be tried as an ultimate measure, when given by specially qualified medical officers with accurately calibrated apparatus.

Eczema or Dermatitis of Scrotum, Perianal Area, Perineum (see also Chap XV)

Simplified Treatment

ACUTE AND SUBACUTE.—

1 Sitz baths. Immersion of parts several hours daily in basin filled with
   (a) Potassium permanganate 1:9000 (℞ 11)
   (b) Silver nitrate solution 0.5 per cent (℞ 12)
2. Wet dressings, with above solutions.
3. Powders Basic powder ℞ 2.
4. In resistant cases, try carefully ℞ 14.
5. When there is not too much oozing basic lotion with antipruritic powder ℞ 3 and ℞ 4.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

ACUTE, SUBACUTE, OR CHRONIC.—

1 Shake lotions and emulsions, ℞ 3 ℞ 21, ℞ 22, ℞ 23, ℞ 24.
2. Vioform ointment, ℞ 78.
3. Tar and sulfathiazole cream
   Crude coal tar 3 per cent
   Sulfathiazole 3 per cent
   In emulsion base ℞ 58 or ℞ 59

4 Paint perianal area once daily with 10 to 20 per cent aqueous solution of silver nitrate.

5 X rays as a last resort, *shielding testicles*

SOME COMMON AND DISTINCTIVE FORMS OF CONTACT DERMATITIS OR CONTACT ECZEMA

Plant Dermatitis (Exceedingly Common)

Not all cases of plant dermatitis are due to poison ivy oak, or sumac (sumac, oak, etc., all have the same ex citant [allergen] as ivy)

Many varieties of weeds grasses, flowering plants, nut bearing and fruit bearing plants, brush, bushes, and trees can and do cause dermatitis in those whose skins become sensitive to some of the plants ingredients. Nevertheless, in this country the poison ivy group probably accounts for many more cases of dermatitis than all the other plants together

In other countries the poison ivy family is either ex ceedingly rare or nonexistent and other plants take first place as offenders.

In some cases, plants (Euphorbia, figs, bergnmot, etc.) act as photosensitizing agents the dermatitis appears as the result of the photosensitizing action of the plant substances The history is then one of exposure to the plant or its derivatives, followed by exposure to light and this in turn, followed by the appearance of the skin irritation. (Similar to photosensitization produced by some drugs, *e g* the sulfonamides (p 314) gold quin ine, coal tar etc.)

Plant dermatitis is essentially an acute or subacute form of contact dermatitis or contact eczema. As in other

forms, the diagnosis is based on history of specific exposure, localization, etc. (Table 7) One characteristic frequently found is that some of the blisters or papules are in *linear* arrangement. (Distribution through scratching or brushing of the leaves or twigs, or through spread of the excitant on the skin surface by patient's scratching.)

Both the simplified and the hospital treatments of acute subacute and chronic plant dermatitis are essentially the same as for other forms of contact eczema-dermatitis (pp. 171-175) In severe acute cases, perhaps the best first approach is to remove clothing apply potassium permanganate soaks, or in generalized cases, to give baths containing potassium permanganate or starch (p 187)

TABLE 6.—SOME FACTS AND FANCIES ABOUT PLANT DERMATITIS (WITH SPECIAL REFERENCE TO POISON IVY ETC.)

1. Q How long is the usual interval between exposure to the plant and first signs and symptoms of eruption?
   A. Usually several hours, often sixteen to forty-eight hours. In some cases, as long as six to fourteen days (the long interval is probably an incubation period and is then evidence that this was a first, or at least the sensitizing, exposure to the plant)
2. Q Can clothing, dogs' or other animals' fur etc., carry the harmful agent?
   A. Yes; therefore, avoid wearing clothing worn during exposure to the plant, until this has been washed or thoroughly cleansed. If you are sensitive, don't touch hairy or furred animals that have been through the plants. (Clothing has been known to reproduce the eruption after hanging in a closet as long as a year.)
3. Q Can smoke from burning plants cause the eruption?
   A. There is no agreement on this point. Apparently if the smoke carries sufficient droplets of the (oily) excitant or particles of the plant, sensitive individuals can get the eruption from this source.
4. Q Can dry leaves, dead twigs, roots, etc., cause the eruption?
   A. Emphatically yes.

5 Q Is the eruption contagious?

A. No, not in the ordinary sense. The contents of the blisters and the oozing serum *cannot* produce irritation even in the most susceptible. But, just as clothing and animals' furs can "hold the excitant, so can the skin surface of the human being (but for a relatively short time—a few hours or until the first bath etc.) For this reason, the irritation can be transferred from one person to another by clothing, etc., or if the contaminated skin area of a person *recently* exposed is allowed to contact the skin of another highly sensitive individual. This is probably also the manner in which the eruption is spread over the skin surface of the individual himself—after original direct exposure, the contaminated hands or clothing carry the excitant to other areas, often the genitals, the face eyelids, etc. Some of these secondarily contaminated areas react soon, while some have long incubation periods therefore new lesions can continue to appear long after the original plant exposure was terminated (as long as six weeks!)

6 Q Can washing or application of oxidizing agents destroy this material on the skin surface, once it has been contaminated?

A. Probably relatively little can be *destroyed* by ordinary washing with green soap laundry soap or with $KMnO_4$ or other oxidizing agents. It is likely that only the excitant still remaining on the surface is removed and/or destroyed by these procedures. That already *in* the skin cannot be destroyed or prevented from irritating Within about five to fifteen minutes after contamination of a skin area, no amount of cleansing or oxidizing will prevent the appearance of dermatitis in the contaminated area of skin in a sensitive individual.

7 Q Can the dermatitis be prevented?

A. Yes and no There is no agreement on many aspects of this question. All of course agree that a sure method of prevention is *avoidance of exposure* to the plant, and that in many instances reduction of amount of exposure is sufficient this is best achieved through the man's knowledge of the plants appearance in their many guises, by wearing protective clothing etc.

Some reliable observers state that oxidizing *protective creams* are extremely valuable in preventing poison ivy dermatitis. None of these has as yet proved its worth, but the method is at least worthy of trial and further study The cream developed by Louis Schwartz of the

U S. Public Health Service has the most extensive experimental background

	Gm. or Cc.
Castor oil	21.5
Olive oil	21.5
Lanolin (anhydrous)	21.5
Diglycol stearate	12.8
Paraffin (refined)	8.5
Boric acid	2.0
Sod. perborate	10.2
Duponol WA	2.0

Some reliable observers state that *specific desensitizing measures* are effective protectives in a certain proportion of cases. Much doubt is attached to this method also. Those methods having the most extensive experimental background and worth further study are

1 The oral method, as recently modified by Bedford Shelmire, giving increasing doses of the excitant by mouth, is the desensitization method of choice, but too time-consuming and tedious for mass use.
2 The intramuscular method. Injections of the "oil" or oily extract into the buttocks.
3 The subcutaneous method or the intracutaneous injection of the alcohol-water or aqueous extract (Hannah, Sutton, Spain and Cooke, and others)
4 The method of ascending concentrations, externally applied for example, as baths, beginning with very high dilutions of extract (Maisel and others)

At the present time none of these is of practical value in military medicine. Injections of the various extracts, after the eruption is present, have little or no therapeutic effect, nd in some instances actually do harm.

Clothing Dermatitis (Wool Dermatitis, Dye Dermatitis, Shoe Dermatitis, Etc.)

A very common dermatitis in the armed forces. The eruption is essentially the same as other forms of eczema or contact dermatitis, and the different stages are treated in the same way (pp. 171-175)

The favored localizations in men are the forehead (hats, etc.) the front, back, and sides of the neck upper chest cubital spaces wrists inner and anterior aspects of thighs, ankles, and lower legs dorsa of toes and feet

5. Q. Is the eruption contagious?

A. No, not in the ordinary sense. The contents of the blisters and the oozing serum cannot produce irritation even in the most susceptible. But, just as clothing and animals' furs can "hold" the excitant, so can the skin surface of the human being (but for a relatively short time—a few hours or until the first bath, etc.) For this reason, the irritation can be transferred from one person to another by clothing, etc., or if the contaminated skin area of a person *recently* exposed is allowed to contact the skin of another highly sensitive individual. This is probably also the manner in which the eruption is spread over the skin surface of the individual himself—after original direct exposure, the contaminated hands or clothing carry the excitant to other areas, often the genitals, the face eyelids, etc. Some of these secondarily contaminated areas react soon, while some have long incubation periods therefore new lesions can continue to appear long after the original plant exposure was terminated (as long as six weeks!)

6. Q Can washing or application of oxidizing agents destroy this material on the skin surface once it has been contaminated?

A. Probably relatively little can be *destroyed* by ordinary washing with green soap laundry soap or with $KMnO_4$ or other oxidizing agents. It is likely that only the excitant still remaining on the surface is removed and/or destroyed by these procedures. That already in the skin cannot be destroyed or prevented from irritating Within about five to fifteen minutes after contamination of a skin area, no amount of cleansing or oxidizing will prevent the appearance of dermatitis in the contaminated area of skin in a sensitive individual.

7 Q Can the dermatitis be prevented?

A. Yes and no. There is no agreement on many aspects of this question. All of course agree that a sure method of prevention is *avoidance of exposure* to the plant, and that in many instances reduction of amount of exposure is sufficient; this is best achieved through the man s knowledge of the plants appearance in their many guises, by wearing protective clothing, etc.

Some reliable observers state that oxidizing *protective creams* are extremely valuable in preventing poison ivy dermatitis. None of these has as yet proved its worth, but the method is at least worthy of trial and further study The cream developed by Louis Schwartz of the

3. Powdering with ℞ 5 (plus camphor and menthol ℞ 4)

4. Antiseptic salves and jellies
   (a) ℞ 10, or
   (b) ℞ 15

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

ANTI ECZEMATOUS AND ANTI IMPETIGINOUS CREAMS.—

1. Crude coal tar 3 per cent
   Sulfathiazole or white amm. mercury 5 per cent
   In emulsion base ℞ 58 or 59 or
2. Vioform salve, ℞ 78,

or

LOTIONS AND TINCTURES.—

1. ℞ 29 or
2. ℞ 41

If the pyodermas are numerous or persistent, sulfonamides locally

1. ℞ 9 or
2. ℞ 10

Because of the possibility of inducing a sensitivity to sulfathiazole by local application, particularly in patients with eczematous eruptions, it is advisable to observe patients most carefully if sulfathiazole ointment is used for longer than five or six days. It has not yet been established whether or not sulfadiazine ointment is prone to induce sensitivity in a considerable proportion of patients, but the possibility of this should be considered when applying any sulfonamide locally especially if the patient is later given a sulfonamide by mouth.

(see Table 7) In less severe cases the dermatitis can be prevented by protecting the skin from the clothing with long cotton underwear

Prove the Cause by Removing the Suspected Clothes for Ten Days to Three Weeks, and Then Allowing Patient to Wear Them Again. Patients with Severe Recurrences Are Usually to Be Considered Unfit for Military Service.

Oil Dermatitis, Grease Dermatitis ("Oil Sores and Boils" Etc.)*

General.—Cutting oils, lubricants, etc., greases, waxes, resins, tars, are notorious causes of dermatitis. These eruptions are usually combined with folliculitis, boils, and other pyodermas (Chap. VIII) The favorite sites are the exposed, and *especially the hairy* parts.

According to Captain A. H. Allen (MC) U.S.N blond and particularly thin-skinned reddish haired men are definitely more susceptible to oil dermatitis than dark skinned persons. It is apparently an advantage, when feasible, to select dark skinned and not too hairy men for work involving much exposure to oils and the like

The treatment and prevention represent a combination of anti-eczematous and antipyoderma methods including scrupulous cleanliness of person and clothing

Simplified Treatment

1 Baths $KMnO_4$ (℞ 11)

2. Painting with weak sulfur resorcin lotion (℞ 8)

* These remarks all apply in great measure to prickly heat—miliaria, Chap. XVIII—and to folliculitis and boils from other causes, *e.g.*, those due to chlorine, tars natural or artificial resins, waxes, and balsams, etc

this condition, the skin test, *i.e.* the *patch test*, is of great value in running down causal allergens, but *can never be the sole means of etiologic diagnosis*. In cases of acute contact dermatitis, the search for causes should proceed about as follows

TABLE 7.—CHARACTERISTIC SITES OF ECZEMATOUS CONTACT DERMATITIS AND THEIR COMMON CAUSES*

Localization	*Suggested Causes*
1. Scalp† and forehead	1. Scalp lotions, scalp tonics, pomades, etc., caps and hats and their bands, linings, and other materials
2. Eyelids (one of the most sensitive areas)	2. Numerous substances used on scalp, face, and hands, soaps, shaving lotions, creams, powders. Air-borne volatile agents and dusts (plants, pollens, insect sprays, gaseous substances; nasal sprays, cleaning fluids, anti-moth preparations, perfumes, benzene dusts from clothing, furniture materials of dyed clothing, fabrics, furs, gloves, etc.)
3. Face in general	3. All possible materials transferred by hands or air borne (see p. 42). All substances used on face, scalp, or hands. Shaving soaps, after-shaving lotions, etc., gas masks, etc.

* Based on table in Dermatologic Therapy in General Practice, Year Book Publishers.

† The scalp is often remarkably resistant to external irritants and allergens. Thus, dermatitis caused by substances used on the scalp often appears not primarily on the scalp but predominantly or exclusively on other more sensitive skin areas, such as the eyelids, ears, and retro-auricular areas, nape and other parts of the neck, face in general, and even the hands.

Among systemic measures, a reduction of carbohydrate intake is sometimes beneficial. When folliculitis and boils are incapacitating and resist local treatment, give *sulfonamides (sulfathiazole)* by mouth for a few days.

> Cleanliness Is the Secret of Prevention Scrupulous and Frequent Hot Shower or Baths, Change of Oil-Soaked for Clean Inner and Outer Clothes as Soon and as Often as Possible, Etc. Protective Clothing and the Application of Protective Lotions (Basic Lotion, ℞ 3 or ℞ 21) before Embarking on the Oily Work Are of Limited Value.
>
> Certain Persons Are Predisposed to the Ill Effects of *Oils* and Greases. *This* Group Includes Fair Thin Skinned, Red Haired, and Freckled or Hairy Men and Diabetics. These Should Be Excluded Whenever Possible, from Oily Greasy and "Dirty" Jobs.

Etiologic Approaches in All Forms of Suspected Contact Eczema Dermatitis

The search for and removal of possible causal agents is a most important part of management in all eczemas, *except the nummular form* (p 170) *Atopic dermatitis* (p 195) however *is* not usually amenable to this approach, although some cases improve by removal from their environment or after exclusion of a particular allergen—food drug or inhalant. (*Desensitization is of no proved or regular value and skin tests*—both scratch and intracutaneous—*are relatively useless*)

Contact-type eczema on the other hand *cannot usually be cured permanently unless the responsible external agent* (*irritant or allergen*) *is found and removed* In

	(fruits, oils) topical medicaments, underdrawers, toilet paper etc.
12. Penis and scrotum	12. Substances carried by the hands plants clothing medicaments used for pediculosis, chemical prophylaxis, fungous infections, etc. condoms (rubber) douches (used by partner) etc.; fabrics, finishes, and dyes in underdrawers, pyjamas rubber and elastic supporters ("Medicaments, see Chap. XIV)
13. Thighs, legs, and ankles	13. Dyed materials and materials of trousers, under drawers, socks, etc. match boxes, cigarette lighters, coins, and other metallic objects carried in trousers pockets, etc.; volatile and air-borne substances, dusts (inside trousers) etc. plants
14. Lower portions f legs—and feet	14. Shoes, socks, stockings (leather dyes, tanning agents, dyes, and finishes of materials, etc.); plants
15. Feet (particularly dorsa of great toes) sides and dorsa of feet and sometimes soles (often with little or no interdigital involvement) (Fig. 19)	15. Shoes, leather dyes, tanning agents shoe polishes, sock dyes and finishes, rubbers, etc.
16 More or less generalized ruptions	16. Any of the aforementioned agents may produce not only localized but generalized eczematous dermatitis. Also, medicaments pplied to numerous or widespread areas and eczematogenous medicaments taken by mouth or injected (arsenicals, quinine, salicylates, hexamethylenetet ramine, etc.)

4 Ears and retro-auricular areas	4 Scalp lotions, salves, spectacles, goggles, ear muffs, etc.
5 Nose and nasolabial areas	5. Nose drops, nasal ointments, sprays, etc., handkerchiefs, paper tissues etc.
6. Lips and perioral areas	6. Mouth-washes, tooth pastes, powders. Sometimes certain foods (oranges, other citrus fruits and their juices)
7 Neck: front, sides and/or back	7 Collars scarfs, neckties, clothing fabrics (wool and dyes) substances used on *scalp*
8. Sides of neck upper chest, wrists, cubital spaces, inner and anterior aspects of thighs ankles, and lower legs and dorsa of feet	8. Typical of clothing materials and their dyes "*uniform* or *wool" dermatitis*
9 Hands, forearms, and face	9 Substances too numerous to list. Most occupational and industrial excitants. Substances encountered in military activities plants (ivy etc.); gasoline *greases, paints, chemicals,* soaps cleansers, gloves, steering wheels, instruments or substances encountered in hobbies or games or topical medicaments applied to self or to others all objects which may be touched, handled held or worn
10 Trunk various sites	10 Clothing plants, underwear night clothes, sweaters, bathing materials, soaps
11 Perianal	11 *Feces and decomposition* products (Cleanliness!—thorough washing after defecation, no toilet paper) substances in enemas suppositories, intestinal parasites ingested foods

and/or what happens when clinical reexposure to the agent occurs.

Positive or negative patch tests merely demonstrate the presence or absence of local hypersensitivity and can thus support or weaken, but never prove or disprove, specific suspicions.

6. Again, *do not test unnecessarily* Use the test only in acute or subacute contact dermatitis, in which the exact cause is unknown, but in which several suspects have been discovered.

Do Not Be Misled by False Positives or by False Negatives. These May Be Due to Your Errors of Concentration, of Application, of Removal, of Reading, or Occasionally Deliberately Produced by Malingering Patients. If You Don't Know How *Don't Skin Test.*

ATOPIC DERMATITIS

Simplified Treatment

1. Eliminate soap, strong cleansers, rough clothing (wool, etc.) dusts, horse and other danders, as far as possible.
2. Apply antipruritic lotions, ointments, and pastes in acute phases. (In very acute stages, wet dressings, ℞ 11 or ℞ 12, whenever possible. See p. 139.)
   (*a*) Antipruritic lotion I.
   ℞ 3 plus ℞ 4
   S. Paint on t.i.d.
   (*b*) Antipruritic ointment
   ℞ 6 plus ℞ 4
   (*c*) Antipruritic paste
   ℞ 7 plus ℞ 4

Often associated with hay fever, asthma, etc.

backs, exacerbations, generalizations of the eruption, may result.

4 Don t use *concentrations of test substances which can produce reactions in most normal skins* If you don t know *find out* from published lists what concentrations are normally safe or *find the correct concentration yourself* (one which will never irritate normal skin) by careful tests with serial dilutions on a series of normals. Use high dilutions first proceeding to higher concentrations step by step only when the preceding concentration has not irritated Be absolutely sure of your concentrations. Patch tests with irritant concentrations *can cause sensitizations*, severe local damage, and above all, false conclusions as to causation (In the case of ordinary clothing and ordinary objects of daily use with which many skins are known to have been in repeated contact without irritation preceding calibration is usually unnecessary These objects can generally be applied directly)

5 Don t rely on the result of *patch tests to disclose or rule out the cause* of a dermatitis. The test can never reproduce all the conditions of actual exposure. A *positive* test demonstrates only that the patient is *hypersensitive* to the agent applied at the time and site of application and under the artificial conditions of application. A *negative* patch test shows only that the particular site is *not* hypersensitive under the aforementioned conditions. Proof or disproof of the etiologic role of an agent must depend on what happens when clinical contact with the agent is withdrawn

and/or what happens when clinical reexposure to the agent occurs.

Positive or negative patch tests merely demonstrate the presence or absence of local hypersensitivity and can thus support or weaken but never prove or disprove, specific suspicions

6. Again, *do not test unnecessarily* Use the test only in acute or subacute contact dermatitis, in which the exact cause is unknown, but in which several suspects have been discovered.

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ATOPIC DERMATITIS

Simplified Treatment

1. Eliminate soap, strong cleansers, rough clothing (wool, etc.) dusts, horse and other danders, as far as possible.
2. Apply antipruritic lotions, ointments, and pastes in acute phases. (In very acute stages, wet dressings, ℞ 11 or ℞ 12, whenever possible. See p. 130.)
   (*a*) Antipruritic lotion I
   ℞ 3 plus ℞ 4
   S. Paint on t.i.d.
   (*b*) Antipruritic ointment
   ℞ 6 plus ℞ 4
   (*c*) Antipruritic paste
   ℞ 7 plus ℞ 4

Often associated with hay fever asthma, etc.

8

3 In dry chronic cases, apply ointments. Examples
   (a) ℞ 16 ℞ 17
   (b) ℞ 18
   (c) ℞ 14
4 Adrenalin 1 1000 (a) 3 to 4 minims intracutaneously when beneficial effect has worn off massage injection site (this often causes renewed benefit) Or (b) 7 to 10 minims subcutaneously to stop acute attack of itching Ephedrine and barbiturate combinations by mouth (some cases are sensitive to these drugs watch for exacerbations)
5 Soothing baths (p 186) whenever possible.

In Severe Cases, or When Condition Does Not Respond within One Week, Refer to Hospital Whenever Possible.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Baths (starch, potassium permanganate, tar—p 187) No soap except on scalp
2. Antipruritic tinctures and lotions, *e.g* ℞ 42, ℞ 25 ℞ 26
3 Soothing and antipruritic ointments ℞ 60 ℞ 61 ℞ 63 ℞ 64
4 For acute flares
   (a) Soothing wet compresses (℞ 11 ℞ 12 ℞ 38)
   (b) Antipruritic tincture (℞ 41)
   (c) Vioform ointment (℞ 78) or ℞ 60 ℞ 61
   (d) Adrenalin by injection.
   (e) Ephedrine (beware of flare-ups!)
   (f) Barbiturates (beware of flare-ups!)
   (g) Bromides (beware of flare-ups!)

Chronic Cases and Lesions.—

1. *X-rays*.—Locally in safe dosage and by specially qualified medical officers enter dose and areas treated on patient's health record.
2. *Ointments Tinctures and Lotions*.—
   (a) Tar ointments
   1. Menthol 0.5 per cent
      Phenol 0.5 per cent
      Crude coal tar 5.0 per cent
      Sulfathiazole 5.0 per cent
      In ℞ 58 or ℞ 59 or
   2. ℞ 79 or
   3. ℞ 80

   (b) Antipruritic ointments
   ℞ 60 ℞ 61 ℞ 63, ℞ 64

   (c) Antipruritic tinctures and lotions
   ℞ 25, ℞ 26, ℞ 41

In Typical Atopic Dermatitis, Do Not Look for External Contact Agents, but Examine for Possible Protein Allergens, Foci of Infection, Endocrinologic, Dietary and Emotional Factors. Complete Change of Environment Is Often the Most (or Only) Effective Treatment.

3. *Eliminate* as far as possible
   (a) Dusts and inhalants (feathers) wool!, animal danders, insecticides
   (b) Rapid changes of temperature
   (c) Emotional difficulties and upsets
   (d) Suspected foods (*e.g.*, eggs, wheat!, milk, pork,

chocolate!) Remember skin tests and desensitization are ordinarily useless. If a food or drug—salicylate barbiturate, etc.—or other allergen is suspected as a cause of "flares, try elimination diets, elimination from environment, etc.

4 Give detoxifying agents
   (a) Autohemotherapy
   (b) Sod. *thiosulfate injections*
   (c) Glucose injections, etc.
5 Look for and when possible *eradicate foci of infection.*
6 Control any dietary endocrinologic or emotional disturbances. Give
   (a) Sedatives
   (b) Rest

Patients with Chronic or Recurrent Atopic Dermatitis Are Likely to Have Periods of Complete Incapacity between the Ages of Eighteen and Twenty Five (Some Also Later) and Are Likely to Be Made Worse by Conditions of Military Service. These Men Are Therefore Not Fit Subjects for Enlistment or Retention in the Armed Forces

NUMMULAR ECZEMA (see Table 4)

Treatment

Acute and Subacute.—

1. *Wet dressings*
   (a) Solution silver nitrate 0 1 to 1 per cent, ℞ 12 or
   (b) $KMnO_4$ ℞ 11.

2. Tinctures, etc.
   (a) Tar paint—℞ 45
   (b) Tincture of merthiolate—℞ 29
   (c) Tincture of metaphen—℞ 43
   (d) Castellani's paint—℞ 44
   (e) Whitfield's tincture or modifications—℞ 47
   ℞ 50
3. Pastes (tar chrysarobin, etc.)
   (a) Menthol 0.5 per cent
   Camphor 1.0 per cent
   Crude coal tar 5.0 per cent
   In paste base ℞ 7
   (b) Chrysarobin 0.1 to 5.0 per cent
   In paste base ℞ 7
4. Water-soluble emulsion base with tar mercury sulfur etc.
   (a) Crude coal tar 5.0 per cent
   Ammoniated mercury 3.0 per cent
   In ℞ 58 or 59
   or
   (b) Crude coal tar 5.0 per cent
   Sulfathiazole 3.0 per cent
   In ℞ 58 or 59
   or
   (c) ℞ 79
5. Shake lotions
   (a) ℞ 23, (b) ℞ 25 (c) ℞ 26
6. If generalized, baths with potassium permanganate or starch several hours daily (see p. 136)

Chronic Dry Stages.—

1 Shake lotions, tinctures, pastes, emulsion bases (see pp. 173–175)

chocolate!) Remember skin tests and desensitization are ordinarily useless. If a food or drug—salicylate, barbiturate, etc.—or other allergen is suspected as a cause of "flares, try elimination diets, elimination from environment, etc.

4. Give detoxifying agents
   (a) Autohemotherapy
   (b) Sod. thiosulfate injections
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NUMMULAR ECZEMA (see Table 4)

Treatment

Acute and Subacute.—

1. Wet dressings
   (a) Solution silver nitrate 0.1 to 1 per cent, ℞ 12 or
   (b) $KMnO_4$ ℞ 11

CHAPTER VII

FUNGOUS INFECTIONS

(Fungous Infections of the Hands and Feet. Trichophytosis, Dermatophytosis, Epidermophytosis ("Ringworm" of Hands and Feet, Athlete's Foot"))

Acute Active Stage (see Figs. 16, 17)

1. Superficial denuded fissures between and under the toes. Single vesicles or patches of vesicles along the sides and undersurface of the toes and on the soles, particularly over the instep and along the inner surfaces. In severe cases the vesicles may coalesce to form bullae and the involvement may extend over most of the toes and soles.
2. When the top of a vesicle is clipped, clear to straw colored material exudes, and the multilocular or honeycombed character of the vesicle may become apparent.
3. Vesicular patches on the soles tend to have the most activity at the periphery of the lesions with clearing in the center but this is not an absolute rule.
4. If a secondary (pyogenic) infection takes place, the vesicles become vesicopustules filled with cloudy fluid or yellow pus, which may eventually result in ulceration there may be localized cellulitis manifested by surrounding erythema and tenderness the cellulitis may extend over the dorsum of the foot and be accompanied by lymphangitis, cellulitis of leg and inguinal lymphadenopathy Septicemia may occur (fortunately rarely)

2 Generalized ultraviolet light treatment
3 General medical check-up, especially for infections, dysvitaminoses, etc.

In Typical Nummular Eczema, Do Not Look for Fungi or External Contact Agents, but for Foci of Infection. Remove from Oil or Grease, Wool Rapid Changes of Temperature, Etc.



Fig. 105.—Method of applying patch test (Sulzberger: Dermatologic Allergy Charles C. Thomas)

3. Lotions, ℞ 8, or ℞ 3 plus ℞ 4 or 2.5 per cent ammoniated mercury ointment (℞ 67) applied after soaks.
4. Bed rest, elevation of feet.
5. Treat as for acute dermatitis—avoid irritative measures (p. 172)
6. If there is a secondary pyogenic infection treat as for pyoderma (see pp 173, 230)

Diagnostic Aids (Hospital) —

1. Direct examination for fungous elements in KOH preparation—experience is necessary
   (a) Carefully select material for examination. Tops of fresh or dried vesicles at the periphery of lesions are the best sources.
   (b) Place material on glass slide, add a few drops of 10 to 20 per cent potassium hydroxide solution and cover with coverslip
   (c) Examine after about thirty minutes. Clearing can be hastened by gentle heating of preparation. (For appearance of mycelia and spores, see Fig 106.)
2. *Culture*—Material is selected in the same manner as for KOH examination. Special media required. Considerable experience is necessary for interpretation of cultural results.
3. *Even in experienced hands both direct and cultural examinations are sometimes negative in cases which are clinically dermatophytosis.*
4. *Trichophytin Tests*.—
   (a) *Intrad rmal* injection of 0.1 (tuberculin syringe) cc. of the extract (Lederle or Lilly) *on* flexor surface of forearm. Results are re-

5 Acute primary fungous infections of the hands are uncommon in temperate climates. The incidence increases in semitropical and tropical zones. Dermatophytid eruptions on the hands, i e., eruptions secondary to acute fungous infections on the feet, are common (see p 208)

Disposition.—Man to be taken off duty and sent to hospital or sick bay if

1. The involvement is severe enough to interfere with walking
2. There is secondary pyogenic infection.
3 Infection is increasing and progressive despite ambulatory treatment.

Simplified Treatment

1 *Foot powder (℞ 1 a or b)*
2. Potassium permanganate (1 9000 solution) soaks (preferably hot) for twenty minutes three times daily whenever possible (℞ 11) or soaks with 0.2 to 0 5 per cent silver nitrate solution (℞ 12)
3 Weak sulfur resorcin lotion (℞ 8) or milder lotion (basic lotion ℞ 3 plus ℞ 4) Apply after soaks
4 Paint fissures with 5 per cent silver nitrate solution two times daily

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Either potassium permanganate or Burow's solution (*℞ 38) soaks every two to three hours.*
2. Remove tops of vesicles and loose keratinous material with curved, sharp-pointed scissors and curet.

3. Lotions, ℞ 8, or ℞ 3 plus ℞ 4 or 2.5 per cent ammoniated mercury ointment (℞ 67) applied after soaks.
4. Bed rest, elevation of feet.
5. Treat as for acute dermatitis—avoid irritative measures (p. 172)
6. If there is a secondary pyogenic infection treat as for pyoderma (see pp. 175 230)

Diagnostic Aids (Hospital).—

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   (c) Examine after about thirty minutes. Clearing can be hastened by gentle heating of preparation. (For appearance of mycelia and spores, see Fig. 106)
2. *Culture*—Material is selected in the same manner as for KOH examination. Special media required. Considerable experience is necessary for interpretation of cultural results.
3. *Even in experienced hands both direct and cultural examinations are sometimes negative in cases which are clinically dermatophytosis.*
4. *Trichophytin Tests.*—
   (a) *Intradermal* injection of 0.1 (tuberculin syringe) cc. of the extract (Lederle or Lilly) on flexor surface of forearm. Results are re-

corded in forty-eight hours. A positive result is manifested by erythema, infiltration, scaling with a variable amount of pruritus and tenderness. Experience is necessary in interpretation of results.

(b) The diagnostic value of the trichophytin test is limited.

1 A positive reaction simply indicates that the individual has had a fungous infection at some time in his life it does not necessarily mean that the presenting eruption is fungous in origin

2. A negative reaction may occur when the patient actually has a fungous disease (anergy)

3 In the secondary dermatophytid eruptions (p. 208) the reaction is almost always positive it follows that a negative reaction in the presence of an acute vesicular eruption of the hands and/or feet almost rules out dermatophytid

(c) The test should be omitted or done with care, in acute cases reduce the dose (0 01 to 0 05 cc.) because of the possibility of precipitating a dermatophytid or generalized secondary eczematous eruption

Subacute Stage

1 As the acute stage subsides, the vesicular patches are replaced by *scaling reddened patches (eczema like inflammation) thickening maceration* and fissures of varying depth may develop

Simplified Treatment

The same as for *acute stage* (p 202) except that the following are added

1. Pragmatar ointment (℞ 14) applied only at bedtime, or
2. One-half-strength Whitfield's ointment (℞ 19) cautiously Apply only at bedtime. Stop if any evidence of irritation.
3. Dilute tincture of iodine, U.S.P XI tincture diluted with 10 to 50 parts of alcohol and applied twice daily

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Castellani's paint (℞ 46) cautiously Apply one or two times daily May be diluted with from one to two parts of water at first. Or
2. 1 per cent thymol, 3 per cent salicylic acid in 70 per cent alcohol (℞ 47)

Chronic Stage

1. Scaling or sodden, moist, often odorous patches or plaques with or without fissuring in the interspace between the fourth and fifth toes less often other interspaces are involved. If all interspaces are involved, the dermatosis is probably secondary to *hyperhidrosis*
2. Thickened, hyperkeratotic plaques with scaling and eczematous changes, with or without fissuring, sometimes with vesicles at the periphery—on the soles posterior to the base of the toes or on the heels.
3. Dull-red, slightly thickened and indurated, finely scaling dry plaques on the sole, around the heel, and along the sides of the feet less often on the

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Subacute Stage

1 As the acute stage subsides, the vesicular
are replaced by scaling reddened patches (e
like inflammation) thickening maceratio
fissures of varying depth may develop

preparation are *dangerous*. Ulceration, destruction, gangrene!)

2. 1 per cent thymol, 5 to 10 per cent salicylic acid in 70 per cent alcohol (℞ 47) Apply two times daily or Castellani's paint (℞ 44) used similarly or Fraser's solution

Salicylic acid	2.0
Benzoic acid	2.0
Tinct. of iodine	10.0
Spts. camphor to make	60.0

3. ℞ 1 6 substituted for issue foot powder
4. Deck's ointment (℞ 62) Apply at bedtime only
5. 0 1 to 0.5 per cent anthralin or cignolin ointment (℞ 72) applied cautiously one or two times daily to chronic hyperkeratotic and scaling plaques, or chrysarobin ointment (℞ 71)
6. Mechanical measures—sandpaper curets, scissors, etc., for removal of hyperkeratotic material. Instruct patient to remove macerated material between toes with a towel.
7. Superficial x ray therapy is helpful in selected cases. It should be used only by a medical officer specially qualified in superficial roentgen therapy Great care should be taken to avoid overdosage. Ill-advised x-ray therapy will sometimes precipitate dermatophytid eruptions.
8. Commercial trichophytin extracts now available have not proved to be of general value in the treatment of dermatophytosis. For practical purposes, *their use as a therapeutic agent is not recommended*

dorsum of the foot and the sides of the ankle. The margins are well demarcated and there are no vesicles. Usually due to a particular species of fungus (Trichophyton purpureum) and characterized by extreme resistance to treatment. These lesions may or may not be accompanied by involvement between the toes. This type may occur on the hands—dorsal surface, palms, and less often on the fingers. It is more common in tropical and semitropical climates.

Simplified Treatment

1 Issue foot powder (℞ 1 *a* or *b*)
2 0 1 to 1 per cent tincture of iodine. Apply two or three times daily
3 5 per cent silver nitrate *for fissures* (℞ 12)
4 Pragmatar ointment (℞ 14) or one-half-strength Whitfield's ointment (℞ 19) Apply at bedtime only

Hospital and Sick Bay Extended Treatment

In addition to simplified treatment

1 Camphor phenol eutexia (℞ 46) Cautiously Apply two times daily It is most important to make certain that the preparation does not contain even a trace of water and that it is not applied to moist surfaces otherwise a caustic effect may occur *No bandages or dressings are to be applied* This preparation is a useful addition for all types of fungous infections but it must be used only under the direction of the medical officer and only when the patient is seen at frequent intervals. (Self medication and uncontrolled treatment with this

result in the persistence of the eruption on the hands.

6. *Irritative treatment* such as Whitfield's ointment and x-ray treatment, particularly with doses of more 50 r to an acute dermatophytosis of the feet, may precipitate a dermatophytid. An injection of trichophytin or other biologic preparation, or any nonspecific intercurrent infection or "upset," may also precipitate an id eruption.
7. Pyogenic infections and contact dermatitis on the feet sometimes result in id eruptions on the hands identical with those secondary to a fungous infection.
8. It is difficult to make an absolute diagnosis of dermatophytid. Rule out other dermatoses, particularly contact dermatitis and vesicular eruptions due to hyperhidrosis, nummular eczema, atopic dermatitis, etc. (Table 4)
9. Do not confuse dermatophytid eruptions with primary fungous infections. The id on the hands is secondary to the primary dermatophytosis on the feet or elsewhere. As a rule the patient does not have dermatophytosis of the hands and feet he has *dermatophytosis of the feet* with a *secondary dermatophytid of the hands*

Treatment.—

1. Treatment of the primary focus as described (p. 202)
2. Potassium permanganate (℞ 11) or Burow's solution (℞ 38) soaks for hands (p. 139)
3. Drying shake lotion ℞ 4 ℞ 23
4. 3 to 10 per cent liq carbonis detergens in vanishing base ℞ 5a.

Secondary Fungous Eruptions (Dermatophytids, Ids)

1. The lesions arise as the result of hematogenous spread of the fungus or the absorption of allergenic products from the primary focus, which are in turn transported through the blood stream, causing an eruption at a distant site. Similar eruptions may also be caused by the absorption and dissemination of allergenic products from bacteria and contact substances.
2. The common sequence of events is a follows Onset of acute dermatophytosis on feet followed by the appearance of a vesicular eruption on the palms and along the sides of the fingers. Itching and inflammatory response variable.
3. The vesicular id on the hands is the commonest type, but scaling eczematoid patches with indefinite borders and with varying grades of erythema may appear on any part of the hands—particularly the palms, sides, and palmar surfaces of the fingers, in contrast to a contact dermatitis which usually involves the dorsal surface of the fingers and hand.
4. Eczematoid id eruptions secondary to a primary fungous infection on the feet (occasionally the primary focus may be in the groins or on the body) may occur around the anus, in the groins, in the axillae, or on any other part of the skin. However the hand is by far the most common site.
5. Uncomplicated dermatophytid eruptions may disappear spontaneously when the primary focus on the feet is cured However secondary pyogenic infection, contact allergic or irritant factors often

to infection is the crucial factor some persons will acquire ringworm no matter what their efforts to avoid it others will not acquire it despite repeated exposure.

Summary Important Factors in Diagnosis and Management of Dermatophytosis

1 Diagnosis will be more accurate if it is remembered that
   - (a) Dermatophytosis occurs between the toes (especially the fourth and fifth) on the sides and plantar surfaces of the toes, and on the soles—occasionally on the sides of the foot—rarely on the dorsum of foot or toes (Fig 38)
   - (b) Dermatophytid eruptions on the hands secondary to dermatophytosis on the feet are fairly common primary dermatophytosis of the hands is *not* common in temperate climates.
   - (c) The tendency is to make the diagnosis of dermatophytosis too frequently and on insufficient evidence. Only a certain percentage of the eruptions on the hands and feet are due to a fungous infection.

2. Recognition (and treatment) of the pyogenic factor manifested by pustules, purulent crusts and localized cellulitis.

3. Avoid overtreatment. *Stop medication if there is any evidence of irritation or hypersensitivity*

4 Liberal use of "issue foot powder especially for those men who have a tendency to excessive sweating of the feet (I) 1 a or b)

5. The incidence and severity are increased in hot, moist climates.

5 Avoid irritants and use hands as little as possible.

Prophylaxis

1. Personal prophylaxis on the part of every man in the command
   (a) *Use issue' foot powder freely* on feet, between toes, in socks, in shoes (℞ 1 a or b)
   (b) *Dry feet thoroughly after showers*
   (c) Avoid ill fitting shoes.
   (d) Get early medical attention to abrasions and fissures
   (e) Do not walk barefooted on floors (shower rooms, barracks etc)
   (f) Do not exchange socks shoes or towels with other men
2 The use of sodium hypochlorite or sodium thiosulfate foot baths near shower rooms is not always practical, and furthermore it is of doubtful value in preventing fungous infections.
3 Bathroom floors particularly the showers, should be kept scrupulously clean.
4 Shoes may be sterilized by placing them in a closed container containing a sponge soaked with formalin for twenty four hours they should not be worn for forty-eight eight hours otherwise contact dermatitis from the formalin might result. However this procedure is of *doubtful value* and should be carried out only if there is evidence of actual spread of contagion from man to man and if shoes which have been worn are reissued.
5 Most authorities agree that *prophylaxis as regards transmission of new fungous infections is highly overrated*. The matter of individual susceptibility

Hospital or Sick Bay Extended Treatment

1. Fungous infections of the nails are notoriously resistant to treatment. Those of the toenails, if extensive, are practically incurable. If these infections produce no disability they require no treatment. Let well enough alone.
2. Surgical evulsion of the nail followed by antiparasitic treatment is the best method white ammoniated mercury ointment (℞ 15) or 0.1 to 1 per cent tincture of iodine or 1 per cent tincture of chrysarobin in chloroform or alcohol.
3. X ray treatment is sometimes helpful in mild cases.

Tinea Cruris (Fungous Infection or "Ringworm" of the Groin, or Dhobie Itch," "Crotch Itch," "Jock Itch," Etc.)

1. *Clinical Appearance*—Well marginated, light-brownish to dull-red patch with slightly scaling surface often tends to clear in the center with a papular or finely vesicular scaling border Smaller satellite lesions occasionally occur Involves the upper inner surfaces of the thighs, the inguinal folds, occasionally the scrotum, buttocks, intergluteal folds (pruritus ani) umbilicus and axillae.
2. Excessive perspiration and friction from clothing are predisposing and aggravating factors.
3. Often obscured by reaction to previous treatment. The genitalia are particularly sensitive to contact dermatitis from applied medicaments.

Simplified Treatment

1. Pragmatar ointment (℞ 14) Rub in thoroughly once or twice daily Treatment of choice. This treatment will effect a "cure" in most cases. Or

6 There is no single medicament or therapeutic measure which will effect improvement or cure in all cases Some infections respond to one type of treatment, others to another type, and some cases persist despite all treatment. Change the treatment if improvement has not occurred in a reasonable length of time (one week)

7 The following predisposing factors are important excessive sweating circulatory instability or vascular disease of the extremities long marches, and the necessity of encasing feet in heavy shoes, prolonged immersion or prolonged wearing of foot gear

Onychomycosis (Fungous Infection or "Ringworm" of the Nails) (Figs 26 38)

1 Affects both toe and fingernails, the former more frequently

2. *Clinical Picture* —Loss of luster which starts at the *free* edge or lateral borders of the nails, followed by friability thickening changes in color and varying degrees of deformity of the nail Eventually the nail plate becomes separated and most of the nail becomes involved. One or more nails are affected rarely more than a total of four or five nails.

3 Paronychial inflammation is uncommon.

4 Affected nails occasionally serve as a focus for reinfection and recurrent attacks of dermatophytosis of the feet.

5 Do not confuse with psoriasis (Fig 1) and other diseases of the nails.

Hospital or Sick Bay Extended Treatment

1. Fungous infections of the nails are notoriously resistant to treatment. Those of the toenails, if extensive, are practically incurable. If these infections produce no disability they require no treatment. Let well enough alone.
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2. Excessive perspiration and friction from clothing are predisposing and aggravating factors.
3. Often obscured by reaction to previous treatment. The genitalia are particularly sensitive to contact dermatitis from applied medicaments.

Simplified Treatment

1. Pragmatar ointment (℞ 14) Rub in thoroughly once or twice daily Treatment of choice. This treatment will effect a "cure" in most cases. Or

2. Sulfur resorcin lotion (℞ 8—mild) Apply two to three times daily
3 If excessive perspiration dust issue" foot powder (℞ 1 a or b) in groins two times daily
4 Treatment should be continued for at least two weeks after clinical signs have disappeared.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Men to be sent to hospital if there is interference with walking or if symptoms are not improving with ambulatory treatment. Usually incapacitating only because of overtreatment or pyogenic infection.
2 If acute or if irritated by previous treatment—bed rest, potassium permanganate (1 9000) compresses or sitz baths or Burow's solution compresses
3 Carbolfuchsin paint (℞ 44) or 1 per cent tincture of iodine or ℞ 8.
4 X ray therapy Under expert direction

Tinea Corporis (Fungous Infection of the Smooth Skin, Trichophytosis, or "Ringworm" of the Body)

1 Not common in adults but incidence increases in warm climates. Consider other annular dermatoses (see p 10)
2 *Clinical Appearance*.—Circinate and annular red and scaling lesions with varying degrees of inflammatory response. Tendency to clear in the center with active vesicular borders
3 Also plaquelike lesions—borders sharply demarcated from normal skin thickened with fine scal

ing, buff to dull-red color often with hyperpigmentation no vesiculation. These lesions may become large and be irregular in contour In these cases they are usually due to a particular species of fungi (T purpureum) and are more common in semitropical and tropical climes. This type is resistant to treatment.

4. Lesions may be single or multiple if the latter usually not more than two or three, or at most a dozen.

Simplified Treatment

1. Pragmatar ointment (℞ 14) Rub in thoroughly two or three times daily
2. Sulfur resorcin lotion (℞ 8) weak apply two to three times daily
3. 0 1 to 1 per cent tincture of iodine.
4. White ammoniated mercury ointment (℞ 15) Do not use in conjunction with iodine.
5. Half-strength Whitfield's ointment (℞ 19) Rub in two to three times daily *Do not use in acute cases*

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Castellani's paint (℞ 44)
2. Resistant plaquelike lesions—1 to 2 per cent chrysarobin in petrolatum (℞ 71) rubbed in thoroughly two times daily Or
3. Whitfield's ointment (℞ 19) or
4. Sulfur resorcin lotion (℞ 8) strong
5. Fraser's solution (p. 207)

(With any of these stop at first signs of irritation.)

2 Sulfur resorcin lotion (℞ 8—mild) Apply two to three times daily
3 If excessive perspiration, dust issue foot powder (℞ 1 *a* or *b*) in groins two times daily
4 Treatment should be continued for at least two weeks after clinical signs have disappeared.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Men to be sent to hospital if there is interference with walking or if symptoms are not improving with ambulatory treatment. Usually incapacitating only because of overtreatment or pyogenic infection.
2. If acute or if irritated by previous treatment—bed rest, potassium permanganate (1 9000) compresses or sitz baths, or Burow's solution compresses.
3 Carbolfuchsin paint (℞ 44) or 1 per cent tincture of iodine or ℞ 8.
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Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

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4. Sulfur-resorcin lotion (℞ 8) strong
5. Fraser's solution (p. 207)

(With any of these, stop at first signs of ir

Tinea Barbae ("Ringworm" of the Bearded Region)

1 *Rare*. Often misdiagnosed Exposure to cattle, horses, etc., is the usual source.
2 *Clinical Appearance* —A pustular folliculitis with induration Sometimes with canalization and sinuses. Usually exempts the upper lip Hairs loose and easily removed
3 Diagnosis depends on the demonstration of the fungus by KOH preparation and cultural examination.

Simplified Treatment

1 If the disease is suspected, the man should be referred to the hospital.

Hospital or Sick Bay Extended Treatment

The treatment is specialized It depends upon the use of

1 Hot wet compresses with sulfur solutions (℞ 37)
2 Sulfur lotions (℞ 8) or ointment (℞ 13)
3 Manual epilation
4 Ammoniated mercury ointment (℞ 15)
5 Superficial x ray treatment, depilatory dose, to be used only by an especially qualified medical officer

Tinea Versicolor (Pityriasis Versicolor) (Fig 62)

1 A harmless, common disease. Due to a particular species of fungi (Microsporon furfur) which cannot be cultured but which can easily be seen in a KOH preparation (see p 203)
2. *Clinical Appearance* —Fawn yellow to brownish irregularly sized, finely scaling macules or large patches and geographic areas of involvement over

shoulders, chest, upper part of back, axillae, and upper part of abdomen. The involvement is superficial.

2. On healing especially if the skin has been exposed to sunlight, the sites of the eruption may show partial depigmentation for weeks or months.

Simplified Treatment

1. Pragmatar ointment (℞ 14) Rub in small quantity two times daily
2. Sulfur resorcin lotion (℞ 8) Apply two or three times daily

Hospital or Sick Bay Extended Treatment

1. 10 per cent sodium thiosulfate solution. Apply two or three times daily
2. Suberythema dose of ultraviolet light every two or three days.
3. Continue therapeutic measures for a period of two or three weeks after clinical signs have disappeared.

Deep Fungous Infections

Blastomycosis.—Slowly extending papillary border in which minute abscesses may be seen. Organisms demonstrable in pus and in sections as double-contoured buds. Differentiate from epithelioma (small early lesions of blastomycosis) syphilis, verrucous tuberculosis, iodo- and bromo-dermas. Seen chiefly in rural districts.

Treatment Always a hospital problem requires expert care. Iodide and x ray therapy most effective. See extended texts.

Sporotrichosis.—Most common type is the sporotrich-

otic chancre at site of entrance, with production of nodules along lymphatics (often with ulceration) and early involvement of regional lymph nodes. Differentiate from syphilis, tularemia primary inoculation tuberculosis, and American leishmaniasis. Another type (rare) is that due to blood stream distribution with subcutaneous abscesses. Organism is a fungus, not visible in smears, demonstrable



Fig. 106.—Skin scrapings cleared with 20 per cent potassium hydroxide, showing mycelia (Becker and Ritchie Arch. of Dermatology and Syphilology Vol. 22)

on culture on Sabouraud Weidman medium A disease of agricultural districts.

Treatment Hospital only Iodides fairly effective. See extended texts.

Actinomycosis.—"Lump-jaw Indurated inflammatory nodules, with canalization and sinuses. Most frequently seen about the face and neck consider it in dental abscesses which drain through skin May occur about ab-

dominal fistulae. Thin pus which contains yellow granules "ray" fungus visible under microscope. Seen chiefly in agricultural districts.

Treatment Iodides, x ray arsphenamines.

Coccidioidal Granuloma.—Occurs principally in the San Joaquin Valley of California. Early symptoms of systemic cases are often respiratory with an accompanying *erythema nodosum*. *Later multiple painless subcutaneous* abscesses develop. May be confused with blastomycosis. Many cases have fatal outcome. No satisfactory treatment. A "vaccine, coccidiodin, has been recommended.

CHAPTER VIII

PYODERMAS

(Impetigo, Ecthyma, Folliculitis, Furuncle, Carbuncle, Etc.)

General

1. The principal etiologic agents are staphylococci and streptococci.
2. The infection may be primary (example impetigo) or secondary to other eruptions (example secondarily infected dermatophytosis) Pyogenic infection may play an *important* role as a complication of almost all forms of dermatitis.
3. Pus and purulent crusts are the distinctive features, although in chronic processes it may be necessary to examine carefully to recognize the pyogenic element in scaling infiltrated eczematous patches and plaques of dermatitis.
4. The types of skin lesions include pustules, bullae, vesicopustules, and ulcers folliculopustules, furuncles, and carbuncles in the hair follicles (See Fig. 107)
5. Some forms (particularly impetigo) are contagious and auto-inoculable. However as in fungous infections, *transmissibility has been overrated* Individual susceptibility dependent on factors which are not well understood, is a crucial factor
6. Irregular bathing habits, trauma, irritation from rough, heavy clothing exposure to oils, greases, and dust, as well as the high incidence of contact

5 The impetigo lesion does not leave a scar unless it has been excoriated. However older lesions which are not treated promptly often become indurated and the site of involvement may not become normal until weeks after the lesion has healed.

6 In hairy regions particularly the beard, nape, sides of scalp, and thighs, follicular involvement predominates, and in these cases the term "follicular impetigo" is applied This type is more resistant to treatment.

Simplified Treatment

1. *Remove crusts* gently with forceps or with soap and water and apply 5 per cent sulfadiazine in water miscible emulsion base (℞ 9) rubbing in three or four times daily In most cases, this treatment will effect a complete cure in four to six days. The crusts will be easy to remove after application of ointment because the base is water soluble. *Bandage* after application of ointment if it is likely to be rubbed off by clothing

2 Send the patient to the hospital if the involvement is extensive, if there seems to be a reasonable probability of transmission to other individuals, or if there is no improvement after two or three days of the above treatment.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 The importance of débridement—removal of crusts, tops of vesicopustules, and purulent material with

forceps, scissors, and curet—cannot be over emphasized. The oozing base may be touched with *10 per cent* silver nitrate.

2. The following additional medicaments will be found useful in selected cases
   (*a*) 5 per cent sulfathiazole ointment (more effec tive in water-soluble emulsion bases) (℞ 58 and 59) has the same therapeutic effect as sulfadiazine.
   (*b*) Potassium permanganate (1 :9000) compresses or if the eruption is extensive, a potassium permanganate bath can be used.
   (*c*) 2 to 5 per cent silver nitrate solution painted on lesions twice daily after removal of crusts.
   (*d*) Ung quinolor (℞ 77) rubbed in two or three times daily Or
   (*e*) *5 to 10 per cent* ammoniated mercury ointment, two to three times daily
3. Ultraviolet or x-ray irradiation is sometimes a useful adjunct, not with sulfonamide therapy

Ecthyma

1. Ulcerative impetigo. An ulcer extending beneath the true skin and covered with a thick, relatively adherent dirty crust. The crust is often depressed and when it is removed, a variable amount of purulent material is visible. The lesion is often surrounded by an inflammatory erythematous tender halo (Fig 22)
2. Scarring follows ecthyma lesions (in contrast to impetigo which is superficial and nonscarring)
3. Occurs at sites of trauma and scratch Commonly on the anterior surface of leg, dorsum of foot.

4. Do serologic tests for syphilis, especially if the lesions are indolent or slow to heal.

Simplified Treatment

1 Remove crusts and purulent material and apply 5 per cent sulfadiazine cream, rubbing in thoroughly two times daily bandage, but avoid use of adhesive on the skin as much as possible. The response to treatment is not so rapid as in impetigo.
2. Patients with ecthyma should be sent to the hospital if
   (a) Lesion is at site of constant trauma.
   (b) Lesion is painful or extensive.
   (c) There is no improvement after three to four days treatment in dispensary

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Bed rest, especially if the lesion is on a lower extremity
2 Hot potassium permanganate (1 9000) compresses every three hours followed by application of the 5 per cent sulfathiazole or 5 per cent sulfadiazine cream.
3 Zinc peroxide dressing two times daily especially in lesions which show any tendency to undermining Activated zinc peroxide is mixed with water to form a thick paste It is packed thoroughly into the ulcers and a dressing applied
4 Ultraviolet irradiation is sometimes a useful adjunct. Do not use in conjunction with sulfonamides given locally or by mouth
5 Sulfathiazole or sulfadiazine orally (1 gm. four times daily) if lesion has not improved after one

week of local therapy or if there is evidence of systemic reaction

Directions to Be Given to Patients with Impetigo.

The Nature of the Disease —

A superficial, sometimes contagious infection of the skin, which most frequently attacks the face. The disease often spreads and affects other areas. Furthermore, other individuals, especially children, are likely to catch the disease from close contact with infected skin or infected clothes and domestic articles. This eruption is caused by common pus germs. Ordinarily these germs are held at bay or effectively destroyed, but under certain circumstances, they infect the skin. To cure the infection and to stop its spread, treatment must be carefully carried out. Keep in mind the fact that this is a disease caused by a germ and is not a matter of "acid food, blood, nerves, poor health, etc.

Treatment —

1. Scrub the affected parts with soap and hot water removing all the crusts. This is necessary in order to get the remedies in contact with the infected skin itself as the germs are lodged beneath these crusts.
2. Apply the medicine prescribed for you in exactly the manner ordered. Before each application, treat the crusts as described in the first instruction.

In some large medical units it has been found useful to mimeograph these directions and to give a copy to each man affected by the disease. Lt. Morris Leider (MC) U. S. N. R., aided in preparing these directions and those on pp. 227–228.

Directions (Continued)

3 Use your own towels, sheets, pillow cases, and clothing Do not let other persons come in contact with the infected skin

4 In washing and drying pat rather than rub. Wash and dry the affected parts last to prevent the spreading of the germs.

5 Do not finger the sores Get away from the general habit of touching injured or diseased skin.

Directions for Shaving —

1 Before lathering wash the face thoroughly and rub some of the prescribed medicine over the bearded area and entire face (except the eyelids)

2. Shave daily with a sharp blade and a good lather Dip the brush and blade repeatedly into hot, preferably boiling water This will tend to kill the germs and thus decrease the risk of spreading the infection

3 Immediately after shaving apply the prescribed medicine to bearded area and face, and then cleanse all shaving articles with soap and hot water

* * *

Impetiginous Dermatitis

1 Includes the primary pyodermas (*streptoderma* due to *streptococci staphyloderma* due to *staphylococci*) which occur at predisposed sites, particularly the feet, hands, groins, gluteal cleft, and axillae. (This is the best term to designate secondarily infected contact dermatitis, dermatophytosis, abrasions, and lacerations.)

2. The hallmarks are pus, pustules, and purulent

crusts. The lesions assume many *forms* and are surrounded by varying degrees of erythema, edema, and scaling which is not sharply marginated from normal skin. The types of lesions include vesicopustules, pustules, patches and plaques interspersed with vesicopustules and covered with purulent crusts, and *shallow excavations of the* skin with irregular somewhat undermined edges bathed in purulent secretion. On the feet particularly localized cellulitis and lymphangitis may arise. In intertriginous sites—between the toes and fingers, in the groins, gluteal cleft and axillae and *posterior to the ears*—the *opposing* parts are reddened, edematous and superficially denuded, and there are variable amounts of purulent material (that between the toes has a characteristic foul odor)

3. The location of the lesions on the feet is variable —there is a tendency to involve the dorsal part of the interspace, particularly the 1st and 2nd interspaces, the sides and dorsa of the feet, and the dorsa of the toes proximal to the base of the nail and any part of the soles. Contrast with the localization of dermatophytosis (Fig. 18) It is sometimes impossible to differentiate between a primary impetiginous dermatitis on the feet and secondarily infected dermatophytosis results of bacterial and fungous examination are not necessarily conclusive.
4. Many of the eruptions on the feet which are diagnosed as fungous infections are actually impetiginous dermatitis (pyoderma)
5. The prognosis varies it is good in secondarily infected, uncomplicated contact dermatitis, provided

Directions (Continued)

3 Use your own towels, sheets, pillow cases, and clothing Do not let other persons come in contact with the infected skin

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2. The hallmarks are pus, pustules, and purulent

2. 5 per cent sulfathiazole cream in ℞ 58 or 59 may be substituted for the sulfadiazine (℞ 9)
3. 1 1000 silver nitrate compresses or soaks for twenty minutes, three times daily
4. Sulfadiazine or sulfathiazole orally (1 gm. four times daily) if involvement is extensive and if there has been no improvement after local treatment. It has been noted that the oral administration of sulfathiazole sometimes causes general exacerbations with elevations in temperature in patients with chronic impetiginous dermatitis, especially if the infection is on the extremities and accompanied by eczematous changes and also if sulfathiazole ointment has been applied for several days previously If this occurs, the drug must be stopped immediately *Large doses of sulfonamides are not often necessary in the treatment of cutaneous diseases.*
5. Superficial x ray therapy to be given under the direction of a specially qualified medical officer In some cases, larger doses (more than 50 r) may precipitate a generalized dissemination.

Infectious Eczematoid Dermatitis

A form of impetiginous dermatitis with a tendency to marked eczematous changes owing to local sensitization factors. Often occurs surrounding secondarily infected pilonidal cysts, furuncles, carbuncles, draining ears, etc.

Simplified Treatment

The indications for hospitalization and treatment in the dispensary are identical with those described for impetiginous dermatitis (p. 228)

the contact substance is removed from the patient's environment (Table 7) The outlook is equally good in secondarily infected dermatophytosis. The types that are accompanied by predominance of eczematous changes are sometimes difficult to cure a chronic dermatitis often persists after the pyogenic element disappears.

6 Excessive sweating contact factors, friction, general medical factors, peripheral vascular changes and inherent susceptibilities which are not well understood are important in many cases. Seborrheic dermatitis is often an important factor in lesions which occur posterior to the ears.

Simplified Treatment

1 Most patients will require hospital treatment, especially if the lesions are on the feet or in the groins and axillae If the lesions are allowed to persist because of inadequate treatment, the chances for complete recovery decrease.
2 5 per cent sulfadiazine cream (℞ 9) or ℞ 58 or ℞ 59 with 5 per cent sulfathiazole applied three or four times daily after removal of crusts.
3 Potassium permanganate (1 9000) soaks or compresses three to four times daily
4 Ammoniated mercury ointment, ℞ 15 diluted with two or three part of petrolatum
5 "Issue" foot powder ℞ 1 *a* or *b* on feet or in groins, if hyperhidrosis is present

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Potassium permanganate baths if the involvement is extensive (see p 137)

3. Ammoniated mercury ointment (℞ 15) applied two times daily
4. Protect skin from rough clothing by means of long cotton underwear

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Ung quinolor (℞ 77) applied two times daily May produce burning on application, or contact dermatitis. If necessary dilute with petrolatum.
2. Hot wet compresses, two or four hours daily with sulfur solutions. ℞ 87

Sycosis Barbae ("Barber's Itch")

1. A deep papulopustular infection of the beard with maceration of hairs. The hairs are easily removed and are covered with a "glassy" sheath. Varying degrees of erythema, edema, and induration surround the lesions which may coalesce to form plaques. Due to pyococci.
2. A chronic disease depending to a large extent on individual predisposition and resistance. Some cases may persist for years, and some are "incurable.
3. Not usually infectious for other men.

Simplified Treatment

1. The great majority of these cases are best treated in hospital or sick bay
2. If this is not feasible, use either 5 per cent sulfadiazine ointment, ℞ 9 or ammoniated mercury ointment ℞ 15 or sulfur-resorcin lotion ℞ 8.

Hospital or Sick Bay Extended Treatment

In addition to that described for impetiginous dermatitis

1. Appropriate treatment of the primary focus is essential. For example, surgical treatment of an infected pilonidal cyst when this is feasible, otologic treatment of otitis media etc.
2. Avoid *uncontrolled* use of nonantiseptic macerating wet closed dressings over draining furuncles and carbuncles as well as discharging sinuses.
3. Ultraviolet irradiation treatments are a useful adjunct. Do not use in conjunction with sulfonamides
4. Use potassium permanganate (1 9000) wet dressings or soaks freely (p 139)

Folliculitis Simplex

1. A pyogenic infection of the hair follicles The elementary lesion is a follicular pustule and the hair bulb itself is usually unaffected The surrounding skin may be somewhat erythematous but there is no crusting as in follicular impetigo of the bearded region
2. The predisposing factors are close shaving trauma (for example rough clothing) rubbing etc.
3. Sites of localization anterior and posterior neck, buttocks, chin thighs, pubes, and eyebrows

Simplified Treatment

1. Sulfur resorcin lotion ℞ 8 weak, applied two times daily or
2. 5 per cent sulfadiazine cream rubbed in three times daily (℞ 9) or

3. Ammoniated mercury ointment (℞ 15) applied two times daily
4. Protect skin from rough clothing by means of long cotton underwear

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Ung. quinolor (℞ 77) applied two times daily. May produce burning on application, or contact dermatitis. If necessary dilute with petrolatum.
2. Hot wet compresses, two or four hours daily with sulfur solutions. ℞ 87

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2. A chronic disease depending to a large extent on individual predisposition and resistance. Some cases may persist for years, and some are "incurable."
3. Not usually infectious for other men.

Simplified Treatment

1. The great majority of these cases are best treated in hospital or sick bay
2. If this is not feasible, use either 5 per cent sulfadiazine ointment, ℞ 9 or ammoniated mercury ointment ℞ 15 or sulfur resorcin lotion ℞ 8.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Ung quinolor rubbed in two or three times daily (℞ 77)
2 Compresses with hot sulfur solution (℞ 37)
3 Hot potassium permanganate compresses
4 Staphylococcus toxoid or ambotoxoid injections
5 Superficial x ray therapy (to be used only by a medical officer especially qualified in this form of therapy)

Furuncle

1 A furuncle is a follicular and sebaceous-gland infection Staphylococcus aureus haemolyticus can usually be cultured
2. May be single or multiple. Tend to occur in crops. A patient may have one or two lesions and then be free of involvement or he may have furuncles almost continuously for many months.
3 May occur on any hairy site but particularly on the extremities buttocks, at the nape of the neck and about the face. The axilla is another important site, particularly because of the disability produced and the tendency to chronicity (The lesions of the axillae are often deep and tender Ordinary furuncles of the axilla may be associated with sweat gland abscesses of this region (see 'Hydradenitis Suppurativa))
4 Furuncles which occur on or about the nose, upper lip, nasolabial folds, or beneath the eye *may endanger life* because of the possibility of extension to the venous sinuses.

5. Incidence is increased in military personnel because of increased trauma and irritation, increased exposure to oils and dirt, and possibly because of high fat and carbohydrate intake.

Simplified Treatment

1. If site or severity of furuncle interferes with performance of duty refer to hospital. *Always refer to hospital if lesion is in the danger area of the face.* Immobilize the patient, give no food, do not permit talking chewing or smoking no squeezing no incision.
2. General instructions for the treatment of furuncles are outlined below

Hospital or Sick Bay Extended Treatment

1. Keep the infection localized and preserve the surrounding infiltration (leukocytic wall) treating expectantly and avoid traumatization. *Do not incise too soon or squeeze*
2. Do not paint with iodine.
3. Apply dry heat with cradle containing a light bulb, or hot wet compresses continously and allow to point. If drainage does not take place spontaneously after pointing has occurred, make *small* incision, keeping well within the leukocytic wall. Avoid "crucial" incisions.
4. After onset of drainage, soak and cleanse with potassium permanganate solution two to three times daily If multiple lesions, use the potassium permanganate bath.
5. Do not apply closed wet dressing, unless the surrounding skin is protected by a shake lotion or

paste ℞ 7 ℞ 29 or ℞ 57 The maceration tends to cause satellite lesions.

6 Use dressings as little as possible and avoid adhesive-tape contact with skin.

7 5 per cent sulfadiazine or sulfathiazole cream probably decreases satellite lesions or paste of zinc oxide (℞ 7) or shake lotion (℞ 3) or mild sulfur and resorcin lotion (℞ 8) can be applied to the surroundings of the furuncle.

8. If more than two or three furuncles have occurred over a short period of time, consider the use of staphylococcus toxoid or ambotoxoid or autogenous-vaccine injections. The reactivity of the skin should first be tested by an intradermal injection of 0 1 cc. of 1 10 dilution. If no reaction is noted it is less likely that injection of toxoid or ambotoxoid will be helpful Decided reactions (persistent erythematous nodule or plaque for twenty four to forty-eight hours or more) indicates caution in dosage The manufacturer s directions as to dosage and interval between injections of toxoid or ambotoxoid are ordinarily satisfactory

9 Examine patient carefully from a general medical standpoint, including complete blood count, glucose tolerance test (always rule out actual or potential diabetes) and examination for foci of infection (teeth, tonsils, and prostate) Initiate appropriate treatment according to the results of such examination—liver extract intramuscularly iron, removal of abscessed teeth etc.

10 Superficial x rays in selected cases (to be used only by specially qualified medical officers) *Avoid over dosage*

11. Exercise particular care in the treatment of furuncles on or about the nose, upper lip, nasolabial folds, or beneath the eyes.
    - (a) *Do not manipulate in any way*
    - (b) Moist or dry heat
    - (c) Potassium permanganate compresses after drainage has been established
    - (d) Sulfathiazole or sulfadiazine orally
    - (e) Complete immobilization soft diet isolation no talking no chewing

Directions to Be Given to Patients with Furuncles or Carbuncles. *The Nature of the Disease.*—Furuncles and carbuncles are caused by common germs (usually staphylococci) which live on the skin and normally do no harm. However under certain conditions, like injury to the skin by rubbing, friction, cut, and puncture, or from lowering of resistance from other causes, these germs gain a foothold and cause trouble. If this happens, a boil of more or less seriousness results. Then, depending on the site of the trouble and the care given, the disease may be cured by the natural defenses of the body or may flourish into a critical affair requiring hospitalization or even operation.

The most dangerous sites for these infections are around the nose, upper lip, and the back of the neck. A furuncle is a solitary boil, and a carbuncle appears as a group of boils run together or as one large boil with several pus pockets.

In some large medical units it has been found useful to mimeograph these directions nd to give copy to each man affected by the disease (Lt. Morris Leider MC, U S N R.)

Directions (Continued)

Treatment.—Your task in the treatment of furuncle and carbuncles is twofold

1 Carry out the specific instructions of your doctor in order to cure the present boil or boils. If your condition is severe or dangerous it will involve
   (*a*) Absolute bed rest.
   (*b*) No talking! No visitors!
   (*c*) Immobilization of the affected part.
   (*d*) Medicines by mouth
   (*e*) Other treatments and tests.
   (*f*) Continuous dry heat or hot, wet compresses with prescribed solutions. These compresses must be kept hot and wet. The cloths or dressings must be changed frequently if soiled with pus.
2. Once a boil has appeared new ones are likely to follow near the original place or elsewhere Carry out the following general measures in order to prevent new boils
   (*a*) Your personal cleanliness must be sparkling As soon as permitted bathe frequently and pay particular attention to the face, neck, armpits, buttocks, and groins, and the areas around the boils. The sites of healing or recently healed boils should be washed and dried *last* and the wash cloths and towels used should immediately be put aside for laundering Unless you follow this routine, the germs will be carried to other parts The hands should be scrubbed

Directions (Continued)

frequently and always right after handling your dressing. Keep your hands away from the boils and your nails cut short and absolutely clean.

(*b*) Your clothes must be clean. Whenever possible, change immediately if soiled with pus and put the soiled things aside for laundering. See that your clothes fit properly especially at friction points (collar crotch, armpits, etc.)

(*c*) Change your bed and night clothes as frequently as possible and at once if you see dried pus or blood on them.

(*d*) Your diet should be plain, simply prepared, liquid, or semisolid. Avoid chocolate, iodized salt, shellfish, and anything else your medical officer prohibits. Drink plenty of water and fruit juices.

(*e*) Keep your bowels open with the help of salts, milk of magnesia, or mineral oil if necessary but do not take any patent medicines.

(*f*) Finally it is most important that you never never squeeze boils or play with pimples.

Hidradenitis Suppurativa ("Sweat-Gland Abscess")

1. Pyogenic infection of the apocrine sweat gland.
2. The important site is the axilla may also occur in groins and perianal and suprapubic regions.
3. Lesions are deep, multiple, and tend to extreme *chronicity*

Directions (Continued)

Treatment.—Your task in the treatment of furuncle and carbuncles is twofold

1 Carry out the specific instructions of your doctor in order to cure the present boil or boils. If your condition is severe or dangerous it will involve

(a) Absolute bed rest.

(b) No talking! No visitors!

(c) Immobilization of the affected part.

(d) Medicines by mouth.

(e) Other treatments and tests.

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Dermatitis Repens.—A chronic form of pyogenic dermatitis highly resistant to all forms of treatment, characterized by patches and plaques which are formed by peripheral extension of vesicopustules and bullae, with tendency to undermining borders and clearing in the center Often starts at base of nail and slowly extends peripherally Affects palms and soles, sides of the heels and fingers.

Hospital or Sick Bay Extended Treatment

1. Study from general medical standpoint.
2. Rule out foci of infection.
3. Carry out thorough trial of sulfonamides orally
4. Otherwise treat as for other forms of pyogenic dermatitis.

Paronychia.—

1. Pyogenic infection surrounding nail (see Fig 89)
2. May be acute or chronic. Often has onset through repeated mild trauma.
3. Contact with soap and water grease, etc. (dishwashers, surgeons, oilers) an important predisposing factor in chronic cases. Some of these cases are due to infection with a yeast (Monilia)

Simplified Treatment

1. Soak in hot potassium permanganate solution (1-9000) Incise only when lesion has pointed.
2. Apply 5 per cent ammoniated mercury ointment under soft tissue and hold ointment in place with finger cot.
3. In intractable cases, examine from general medical standpoint as for chronic furunculosis. Rule out diabetes.

4 To be differentiated from simple furunculosis in the axillae which is more superficial, less chronic

Simplified Treatment

These cases should be hospitalized for treatment

Hospital or Sick Bay Extended Treatment

1 Hot potassium permanganate compresses.
2 Hot sulfur solution compresses (℞ 37)
3 Staphylococcus toxoid or ambotoxoid
4. X ray therapy
5 General studies and therapeutic measures as for furunculosis (sulfonamides by mouth)
6 In chronic severe cases surgical excision of the involved area may become necessary

Miscellaneous Pyogenic Infections

Ulcer —Differs from ecthyma in that the lesion is often single may be more extensive and the edges undermined. More common on extremities, often due to trauma—stasis an important contributory factor Constitutional "lack of resistance of unknown nature appears to be a significant contributory cause in many cases

Simplified Treatment

As for ecthyma (p 225)

Hospital or Sick Bay Extended Treatment

1 Always rule out *tuberculosis syphilis other chronic granulomas blood dyscrasias diabetes*
2 Study from general medical standpoint. Rule out sickle-cell anemia in Negroes
3 Do careful bacterial cultures, including anaerobic, if possible.
4 Use zinc peroxide (see p 226) if there is any undermining Azochloramid useful in some cases. Otherwise the treatment is similar to that for ecthyma.

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1. Soak in hot potassium permanganate solution (1:9000) Incise only when lesion has pointed.
2. Apply 5 per cent ammoniated mercury ointment under soft tissue and hold ointment in place with finger cot.
3. In intractable cases, examine from general medical standpoint as for chronic furunculosis. Rule out *diabetes.*

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1 Surgical evulsion of nail, or
2. Superficial x rays (at the hands of specially qualified medical officer)

Perlèche —A moist, grayish fissure at the angle of the mouth which may be due to streptococci or to a yeast (Monilia)

Simplified Treatment

1 Always rule out *secondary syphilis* and *riboflavin deficiency*
2. Use 5 per cent silver nitrate, 5 per cent sulfadiazine ointment, or 5 per cent ammoniated mercury ointment locally

Erysipelas.—

1 A streptococcal dermatitis and cellulitis due to a particular type of beta hemolytic streptococci.
2. Commonly on the face (near the nose) and around a wound.
3 The hallmarks of diagnosis include an angry red color palpable advancing border patient usually ill with temperature and pulse elevated regional lymphadenopathy
4. Sulfanilamide or sulfadiazine in full dosage the treatment of choice.
5 Isolate from surgical patients and observe "infectious precautions"

The Pyogenic Element in Eczema.—

1 Localized eczemas of unknown cause are often com-

plicated by secondary bacterial infection which prolongs the course.

2. The pyogenic element is manifested by pustules, folliculopustules, and crusting It is sometimes conspicuous.
3. Local and general sensitization to the bacteria and their allergenic products probably account for the unfavorable effect which secondary pyogenic in fection has on eczematous processes.
4. Elimination of foci of infection, staphylococcus toxoid injections, and superficial x ray treatment under expert guidance are therapeutic approaches to be considered.
5. Localized eczematous processes which occur chiefly on the extremities, due to a combination of contact factors, pyogenic factor hyperhidrosis, neu rogenous substrates are notoriously resistant to treatment. If the cutaneous disease interferes with performance of duty as it often does, every effort should be made to refer the man to a hospital where an experienced dermatologist is available.
6. Some individuals with atopic dermatitis are subject to pyogenic "flares" at intervals. The treatment is the same as that for impetiginous dermatitis. The patient is often improved after such episodes.
7. Treatment should be directed toward both the pyogenic and eczematous phases.

Granuloma Pyogenicum.—A rounded or oval, pedunculated, mushroomlike tumor which springs up at the site of a secondarily infected injury or at the edge of a wound. Very vascular bleeds on slight trauma, reddish to purple in color sometimes tender May occur on any part of

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CHAPTER IX

ACNE VULGARIS, ACNEFORM ERUPTIONS, AND ROSACEA

Acne Vulgaris

This eruption is so common in adolescents that it must be considered physiologic when present in only a mild degree at puberty

The eruption consists of blackheads, whiteheads, large pores (enlarged openings of sebaceous glands) sometimes "thickened skin, papules, pustules, and occasionally cysts and pitted or keloidal scarring which may result in great disfigurement.

The typical localizations (see Fig 9) are face (forehead, cheeks, chin, etc.) chest (V of neck, upper chest) back (upper portions, to flare of ribs, particularly shoulders)

The exact causal mechanism is unknown however the eruption seems to be due, directly or indirectly to male sex hormones (androgens) or related steroid compounds and their action on the pilosebaceous apparatus of the skin.

The eruption is not caused by infection, but can be made worse by this.

The eruption is not due to foods or drugs, but, in some cases, can be made worse by certain foods or drugs (bromides, iodides, chocolate, fish, pork, etc.—see "Directions to Be Given to Patient with Acne, p. 248)

The condition is not caused by foci of infection, or thyroid disturbance or by oils, greases, wool, sunlight,

cutaneous surface, but hands, feet, and lips are usual sites. If there is any doubt concerning the diagnosis, do a biopsy The histologic picture is very characteristic (see larger dermatologic textbooks)

Treatment—Destroy lesion with electrodesiccation, curet and fulgurate the base, or excise and cauterize the base. Sulfonamides (sulfathiazole or sulfadiazine) locally or by mouth have also been recommended

The Overlooking of a Pyogenic Element in Eczematous Eruptions Is One of the Most Common Sources of Mistreatment in Dermatology Pyoderma May Be Eczematous Rather than Frankly Purulent and Inflammatory Look for Vesicopustules, Pustules Dirty Crusts, and Evidence of Autoinoculation The Longer a Pyogenic Infection of the Skin Remains Untreated the More Difficult the Cure. Hypersensitivity of the Skin to Bacteria and Their Toxins Often Occurs Promptly and Is Difficult to Relieve.

Erysipeloid

Erysipeloid is a superficial subacute cellulitis caused by the bacillus of swine erysipelas. The lesions are moderately inflammatory and have an annular or gyrate papular border which advances rather slowly The disease is found principally in fish or meat handlers Frequently a history of injury (small cut or puncture wound) is obtainable Immobilization x ray therapy specific serum or foreign protein therapy has been used (see larger texts)

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The condition is not caused by foci of infection, or thyroid disturbance, or by oils, greases, wool, sunlight,

etc., but can sometimes be made worse by any or all of these.

Nor is the eruption caused by sexual continence, masturbation, or sexual excesses.

The eruption of acne vulgaris is not infrequently combined with oily greasy skin and scalp dandruff, seborrheic dermatitis, and sometimes with male-type baldness.

The tendency to all these seems to run in certain families.

Simplified Treatment

1 Daily and repeated thorough scrubbing with hot water soap and brush or rough cloth.
2. Shampooing of scalp *at least* once weekly with tincture of green soap or other plain soap
3 Application of one to two sulfur resorcin powders (℞ 8) in basic lotion (℞ 3) each night, to be scrubbed off in the morning or application of one to two sulfur resorcin powders (℞ 8) in ointment or paste base (℞ 6 and/or ℞ 7)
4 When possible, avoidance of grease, oils, rough clothing tars, pitch, artificial resins and waxes (especially chlorinated diphenyls)
5 Hot wet compresses, opening of fluctuant cystic lesions by scalpel incision and wick drainage
6 Some cases are made worse by internal medicaments (especially iodine, iodides, bromides) and by chocolate fish nuts, pork, cheese etc. Eliminate these when possible.
7 General hygiene scrupulous cleanliness of hands and clothing correct diet regular bowel movements, etc.

Patients with Disfiguring or Severe Eruptions Resisting This Regimen Should Be Referred to Hospital or Dispensary for X ray and Other Treatment.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Superficial x-rays in safe dosage, administered onl by specially qualified medical officers. (This is th best of all acne treatments—accounts for 90 pe cent of all good results achieved in severe cases.)
2. Hot wet compresses, *two or more hours daily* wit sulfur solutions (℞ 37)
3. Apply each night sulfur and resorcin lotion (℞ 29 o ℞ 30) or sulfur 3 to 10 per cent, resorcin 3 t 10 per cent, in ℞ 58 or ℞ 59 or quinolor oint ment, ℞ 81
4. Daily use of scalp lotion (℞ 31 or ℞ 32)—with ad dition of castor oil when hair is dry Scalp cream once weekly (℞ 14, ℞ 68. See Chap. X)
5. When x rays have been given to tolerance (8 to 1 doses of 75 r *each is the limit of one series*, bu can be repeated after one year) generalized ultra violet irradiation in suberythema doses may b tried. Sunlight and ultraviolet rays and othe measures to promote peeling* are helpful in som cases, but harm others.
6. Educate patient to cleanliness and hygienic living *Treat accompanying disease and disturbance (seborrhea [Chap X] endocrine disturbance [thyroid etc] foci of infection, etc.)*
7. In cases with many cystic lesions, excision an

* Peeling with "cold-quartz" lamp, or with solid carbon dioxid (CO_2 snow) mixed with acetone to form a sherbetlike slush.

drainage (wick) X rays to individual cysts. Staphylococcus toxoid or autogenous vaccine injections, arsenicals, iron, liver extract etc., as indicated Washing the face with 5 per cent sulfathiazole in ℞ 58 or 59 is sometimes helpful.

* * *

Directions to Be Given to Patient with Acne*— The underlying disturbances in this skin trouble are overactivity and plugging of the minute glands of the skin This overactivity often occurs at puberty It may clear up spontaneously after a few years, or it may persist. This disturbance when it affects the glands of the face, leads to large pores, oiliness of the nose, and to blackheads, whiteheads, and pimples, which may also appear on the back and chest. Acne is not catching and is not dangerous, but may sometimes leave pitting and scarring

The local treatment of acne is directed towards the dissolving and removal of the plugs in the openings of the glands To accomplish this, hot water and a good white soap should be used freely (at least three times a day) The affected skin should be washed with a rough cloth or a complexion brush At night, after the last washing the prescribed acne lotion or cream should be applied freely by gentle massage to affected parts of the skin The lotion (which will dry to a fine white powder) or the cream should be left on over night, and should be removed with the usual soap and water washing in the morning Temporarily the skin should become somewhat dry and roughened under

* In some large medical units it has been found useful to mimeograph these directions and to give a copy to each man affected by the disease (Lt. Morris Leider MC U S. N R.)

Directions (Continued)

the treatment. This temporary roughness is desirable, for it constitutes a mild peeling which opens the plugged pores. However if peeling should occur to such an extent that the skin becomes *very* red and uncomfortable, the applied remedy should be discontinued for one or two nights. While using this remedy no applications or treatments other than those prescribed are permitted. Greases and creams of all sorts are prohibited unless prescribed, since they often add more grease to that which is already present in the gland openings, thus tending to make the acne worse.

Care of the scalp is essential in the treatment of certain types of acne. In such cases the hair should be shampooed at least once a week, preferably twice a week. Each night a little of the prescribed scalp lotion should be poured into a saucer a soft toothbrush is then dipped into the lotion, the hair parted and the roots of the hair and the scalp massaged with the moistened brush. Then the hair should be parted again about 1 inch from the first parting and lotion again rubbed the length of the part. This procedure is repeated until the entire scalp has been treated.

Experience has shown that the following tend to make *some* (but by no means *all*) cases of acne worse and must therefore be strictly avoided

Medicines. IODIDES.—Also cough mixtures and other medicines that may contain iodides.

BROMIDES.—Bromoseltzer triple bromides, bromoquinine laxative, nerve medicines or sedatives containing bromides, etc

SEDATIVES.—In exceptional individuals all sedatives and "sleeping medicines" may make the skin worse.

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Directions (Continued)

Foods.—

Pork or pork products

Chocolate in any form (*e g* cocoa, chocolate candy chocolate cake, chocolate ice cream, chocolate sodas, sauces, etc.)

Nuts Cheeses

In addition, in exceptional cases, other foods may make acne worse. Common among these are shellfish, fish oatmeal malted drinks, eggs, and spinach If you have noticed a harmful effect from these or other foods, eliminate them from your diet.

Avoid all *excess* of fats and sweets, but do not diet." Get as much exercise and sleep as possible. Drink six glasses of water daily If after carrying out the above instructions, you are still constipated, do not take laxatives, but discuss the matter at your next sick call

Chronic infections of the teeth sinuses, tonsils etc., anemia, thyroid and other glandular disturbances, etc., may play a part in some cases of acne You should therefore have a general examination if you have not had one within the last six months, and be examined by the dentist if your teeth have not been x rayed in a year

As far as possible, avoid the wearing of woolen or other rough clothing and above all *avoid soiled greasy oily clothes* next to the skin Take these off and scrub with soap and hot water as soon and as often as you can.

In some instances the above outlined measures are sufficient to achieve a cure the most important factor

Directions (Continued)

being the care with which this treatment is carried out. Other modern methods of treatment include various types of injections (vaccines, etc.) and certain medicines to take internally These are indicated when the above-outlined measures seem insufficient.

In many cases, the overactivity of the skin glands is such that it must be combated by other means. A series of x ray treatments is at present by far the most effective method of bringing the overactive skin glands back to their normal function. Modern x ray treatment is not only the most reliable way of combating acne, but it is absolutely safe when administered by a competent medical officer

Before you are discharged as cured, you must receive instructions regarding the future care of your skin. With the proper measures, recurrences of acne can usually be prevented.

Most patients with acne will get well under this management, but a small percentage resist and continue through life. Many get well as far as active lesions are concerned but have scars of various degrees of severity

Disfiguring Severe Acne Which Resists Treatment May Constitute a Cause for Medical Discharge from Service. Men with Severe Acne or Tendency to Severe Acne Should Be Relieved from Work with Oils, Greases, Tars, Pitch, Waxes, and from Duties in Confined, Dusty or Dirty Spaces, Etc., Whenever Possible.

Acneform and Furunculoid Eruptions Due to Drugs, External Causes, Etc.

Bromides iodides, and, rarely other drugs such as salicylates, barbiturates, as well as certain foods, can cause acnelike and/or furunculoid eruptions and external exposure to oils, tars greases, waxes, etc., can also cause identical forms in susceptible individuals (Chap. XIV) These eruptions are all more likely to occur in patients who tend to acne vulgaris or furunculosis.

Most acneform dermatoses favor the typical localizations of acne vulgaris. However additional sites are usually also affected in the drug acnes and the acnes due to oils, tar etc. These last named eruptions, in contrast to acne vulgaris are likely to affect also the lower part of the back and the buttocks, the thighs and forearms (hairy persons)—see Chap VI—and even the legs.

Treatment.—The treatment, both *simplified* and *hospital*, of these dermatoses is like that of acne vulgaris (see pp 246 247) or of furuncles (see Chap. VIII) with, of course, the addition of removal of the causal agent, whenever possible.

Large doses of sodium chloride by mouth or intravenously are used to hasten the excretion of bromides or iodides in eruptions due to these drugs.

Acneform eruptions due to drugs and external agents can persist for months or even for years after removal of the cause Superficial x ray and local treatment are as likely to be useful in persistent acneform drug eruptions and in acnes of external causation, as they are in acne vulgaris, provided the causes of the two former types have been found and removed.

In addition to drug eruptions, oil and wax and tar eruptions, etc., many other dermatoses can either closely

or remotely resemble acne vulgaris. These include papular and pustular syphilids, tuberculids, etc.

In All Doubtful Cases, Careful Taking of the History Elimination of All Drugs except Those Essential to Life, and Complete Medical Examination, Including Serologic Tests for Syphilis.

Rosacea with Acne

This dermatosis is much less common than acne vulgaris. It generally appears in middle age rather than in youth or adolescence.

In contrast to acne vulgaris, the back and chest are usually spared, the face only being affected. The nose and central portions of the face are the favored sites (see Fig 9)

Individual lesions consist of papules, papulopustules, large "pores," sometimes increased size of nose (hypertrophy of *sebaceous structures*—rhinophyma) plus more or less erythema and *dilated blood vessels* on nose and cheeks.

The eyes are sometimes affected ("rosacea keratitis" —said to respond to large doses of riboflavin)

Simplified Treatment

Same as that of acne vulgaris (p. 246) In addition, the gastritis which is often present, and the usual hypo- or achlorhydria, should be managed as follows

1. Bland diet.
2. Avoid hot or spiced food, drinks.
3. No alcohol, no tea, little coffee.
4. Dilute hydrochloric acid by mouth, as indicated.

Hospital or Sick Bay Extended Treatment

Will be required only for severe cases with rhinophyma. In addition to the above

1. Search for and removal of foci of infection
2. Reduction of redundant nasal tissue with solid carbon dioxide or trichloracetic acid or
3. (*a*) Surgical paring off of hypertrophic masses with scalpel or razor blade under local anesthesia followed by pressure bandage to stop the oozing or
   (*b*) Electrocoagulation of the hypertrophic masses.
4. Relatively mild cases do well with a series of x-ray treatments, as in acne vulgaris.
5. Emotional and endocrinologic factors and dysvitaminoses to be sought for and managed when found
6. Rapid changes of temperature are to be avoided if possible.

Tuberculids, Syphilids, Drug Eruptions, Lupus Erythematosus, Seborrheic Dermatitis, Etc. Can Simulate Rosacea and Acne Vulgaris.

Acne Varioliformis (Acne Necroticans)

This disease is *not* a form of acne vulgaris, or of rosacea or of any other type of acne but is a distinct disease entity It is a chronic and recurrent eruption of unknown cause. The incidence of acne varioliformis is much lower than that of acne vulgaris and somewhat lower than that of acne rosacea.

No age, or sex, or site is exempt, but middle-aged males are most likely to be affected and the sites of pref

erence are the margins of the hairy scalp, the nose, and the sides of the face. The hairy scalp itself the back, and the chest may also be affected.

The lesions can vary from pinhead to large pea or bean-sized. The elevated, reddened papules soon develop central necrotic crusts, and eventually heal with pitted scarring reminiscent of that of smallpox or chickenpox (hence the designation "varioliformis") Sometimes the scarring is infinitesimal, sometimes so severe as to cause great patches of permanent baldness and serious disfig urement of the nose, face, and other parts.

The lesions may appear in showers or singly may be discrete or grouped sparse or numerous.

Differential Diagnosis.—Must include, above all

1 Acne vulgaris (with pitting and scarring)
2. Folliculitis or furunculosis with scarring
3 Acneform drug and other eruptions (Chap. XIV)
4 Acneform and scarring tuberculids and syphilids
5 Neurotic excoriations

Simplified Treatment

1. Wash face and scalp as thoroughly and as often as possible.
2. White ammoniated mercury ointment (℞ 15) or Resorcin and sulfur ointment (℞ 6 plus ℞ 8) Applied to scalp and affected parts b.i.d to t.i.d.
3. Reduce caloric intake and particularly of fats. Give high vitamin diet. Eliminate chocolate and other foods, as directed for acne vulgaris.

Hospital or Sick Bay Extended Treatment

Hospitalization will rarely be necessary In addition to simplified treatment

1 Cleanliness, local asepsis " prevention of "picking" and autoinoculation as in acne vulgaris, furunculosis, etc. Shampoo and wash with mercurial soap (e g Neko, Parke Davis & Co) daily to several times weekly

2 Locally

(a) Mercurials (℞ 66 or 10 per cent ammoniated mercury in emulsion bases ℞ 58 or ℞ 59) or

(b) Sulfur and resorcin or salicylic acid (℞ 68) or perhaps

(c) Sulfonamide creams (℞ 76 ℞ 9) Or quinolor ointment (℞ 81)

3. A course of x ray treatment, administered only by specially qualified medical officers.

4 Worthy of trial are

(a) Diet, eliminating first those foods known to be harmful in acne vulgaris and rosacea High-vitamin low-caloric diet.

(b) *Reduction in weight if overweight* (probably the most important systemic approach)

(c) A course of arsenic by mouth or injection (p 283)

(d) Injections of staphylococcus toxoid (p 236)

Hormonal therapy (administration of male or female sex hormones) and sulfonamides by mouth have been recommended recently These measures are both still distinctly in the experimental stage.

CHAPTER X

THE COMMON PAPULOSQUAMOUS ERUPTIONS

It is convenient to group certain eruptions which often occur in papular form and tend to scale. In the subsequent descriptions it will be noted that these eruptions often do not adhere strictly to this morphologic classification, are of diverse, often unknown, cause, and require various treatment measures.

Psoriasis

General Description.—

1. The typical psoriatic papule or plaque has a dull red base which is covered with a silvery moderately adherent scale. In most cases the outline of the lesion is sharp and distinct (see Figs. 57 58 69)
2. A majority of cases tend to develop lesions in a characteristic distribution (see Fig. 1) The most common variant of this extensor surface distribution is the "seborrheic" distribution (see Fig. 11) (psoriasis inversus)
3. Psoriasis has been separated into various groups based on the size and configuration of the lesions. Such grouping is unnecessary for practical purposes as long as it is kept in mind that individual small lesions may coalesce to form large plaques and that concomitant partial healing and exten-

1 Cleanliness, local asepsis," prevention of "picking and autoinoculation as in acne vulgaris, furunculosis, etc. Shampoo and wash with mercurial soap (*e.g* Neko Parke Davis & Co) daily to several times weekly

2 Locally
   (*a*) Mercurials (℞ 66 or 10 per cent ammoniated mercury in emulsion bases ℞ 58 or ℞ 59) or
   (*b*) Sulfur and resorcin or salicylic acid (℞ 68) or perhaps
   (*c*) Sulfonamide creams (℞ 76 ℞ 9) Or quinolor ointment (℞ 81)

3 A course of x ray treatment, administered only by specially qualified medical officers.

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   (*a*) Diet, eliminating first those foods known to be harmful in acne vulgaris and rosacea. High vitamin low-caloric diet.
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sion often produce bizarre geometric patterns of solid or circular lesions.

4. Psoriasis lacks two characteristics of many dermatoses and this absence is of great aid in diagnosis
   (a) It is *not* frankly vesicular
   (b) It does *not* produce scarring
5. Several variations in the extent and severity of psoriasis are of importance in selecting treatment and in predicting possible disability
   (a) Chronic extensive plaques, involving as much as one-fourth to one-third of the skin surface Extensive involvement may be relatively symptomless, but is unsightly to other men in quarters, and objectionable because of the constant exfoliation of scales.
   (b) Acute advancing psoriasis. This may occur spontaneously or as a result of unduly stimulating treatment. It is often accompanied by *itching* which is not characteristic of the chronic phase. Moisture may be noted In this phase there is some possibility of severe dissemination and the production of a chronic erythroderma.
   (c) Papulopustular psoriasis of the palms and/or soles (Fig 20) Itching and oozing may sometimes be noted. The differentiation from syphilis and dermatophytosis or id" may not be possible on the basis of morphology
   (d) Psoriasis with arthropathy—less than 1 per cent of psoriatics.
   (e) Seborrheic psoriasis with secondary infection—fissures and streptococcic pyoderma in retroauricular folds umbilicus, gluteal cleft, and

crural folds. (Often difficult to differentiate from seborrheic dermatitis.)

6. The cause is unknown, the disease incurable. The infectious (e.g. monilia) and metabolic (related to fat, protein, or vitamin intake or metabolism) theories have not been proved. Psoriasis often occurs in healthy persons. There is some familial tendency. It occurs *rarely* in Negroes.
7. The skin of the patient with psoriasis tends to react to trauma of various types by the development of a psoriatic lesion. In advancing psoriasis, scratching of the skin may produce a row of psoriasis papules. The most common localization, elbows and knees, probably is the result of repeated trauma and friction. The localization in seborrheic psoriasis is probably the result of the underlying seborrheic disturbance. In acute psoriasis, any stimulus, whether from x-rays, excessive ultraviolet exposure, or overtreatment, may have an exacerbating effect.
8. Psoriasis involves the nails in 25 to 50 per cent of patients with the disease. Distinguish *from* ringworm; psoriatic nails are often mistreated as such. The characteristic features of psoriasis of the nails are detachment of the distal end of the nail, loss of luster, accumulation of dry cellular debris under the end, pits which are often longitudinally arranged, and occasional severe deformity (Fig. 1).
9. Psoriasis of the genitalia, particularly of the glans penis, is often difficult to distinguish from syphilis and seborrheic dermatitis. On the glans the lesions may be confused with many other penile dermat-

oses, e g lichen planus drug eruptions, gonorrheal syphilitic, other venereal lesions, or a rare premalignant process (erythroplasia)

10 Psoriasis is sometimes improved during the summer months especially if considerable exposure to sunlight is possible In most cases it is unnecessary to undertake active medical therapy at this time.

Treatment —In the treatment of psoriasis it should be kept in mind (1) that permanent cure is impossible with present methods, (2) that the regular routine of military life is ordinarily favorable to control of the disease and (3) that every psoriatic tends to develop a "tolerance" or "resistance" to methods of treatment which may have been helpful initially Therefore, treat with a view to satisfactory palliation and not complete obliteration of every lesion avoid too frequent changes in treatment, and above all avoid doing harm with treatment for this relatively harmless disease.

Simplified Treatment

ACUTE STAGE.—If rapidly advancing extensive and pruritic, refer for consultation whenever possible.

SUBACUTE STAGE.—

1 Ammoniated mercury ointment 2 to 10 per cent (℞ 15) or pragmatar ointment (℞ 14) two to three times daily

2. Exposure to natural sunlight in gradually increasing doses.

3 In involvement of the scalp pragmatar ointment (℞ 14) applied every night, with shampooing three times weekly

4. In involvement of skin folds, 10 per cent silver nitrate twice daily or resorcin-sulfur shake lotion ℞ 8, weak.
5. If evidence of secondary infection in folds, 5 per cent sulfadiazine cream three times daily
6. Thorough soap and water washing daily when possible.

CHRONIC.—

1. Treat only if disfiguring and thus affecting the patient's morale, or if producing symptoms.
2. Natural sunlight to the limit of tolerance for those who tan well.
3. 10 per cent ammoniated mercury ointment ℞ 15 applied once or twice daily with or without addition of 3 to 5 per cent salicylic acid.
4. Thorough removal of scales with soap and water daily when possible. Scrub!
5. Pragmatar ointment ℞ 14 for scalp or intertriginous involvement, at night.
6. If intractable and advancing over period of three weeks, refer patient to hospital, if possible.

Hospital or Sick Bay Extended Treatment

ACUTE STAGE.—

1. Avoid treatment irritation. Start with mild measures, boric acid ointment ℞ 18 soothing shake lotions, ℞ 3, 4, 23, 26, starch or mild tar baths, or vioform ointment (℞ 78)
2. Intramuscular injection of patient's own whole blood 10 cc. three to four times weekly
3. Avoid x rays or arsenical therapy
4. As acute phase subsides, *i.e.*, erythema less evident,

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Simplified Treatment

ACUTE STAGE.—If rapidly advancing extensive, and pruritic, refer for consultation whenever possible

SUBACUTE STAGE.—

1 Ammoniated mercury ointment, 2 to 10 per cent *(℞ 15) or pragmatar ointment* (℞ 14) two to three times daily
2. Exposure to natural sunlight in gradually increasing doses
3 In involvement of the scalp pragmatar ointment (℞ 14) applied every night, with shampooing three times weekly

Especially Difficult Problems in Treatment in Psoriasis—

1. *Extensive Diffuse Involvement of the Scalp*.—Strong concentrations of salicylic acid (5 per cent) ammoniated mercury (20 per cent) or of sulfur (20 per cent) and tar (oil of cade, 10 per cent) may be needed (see also ℞ 67)
2. *Intertriginous Psoriasis*.—Castellani's paint, ℞ 44, 10 to 20 per cent silver nitrate, dusting powder ℞ 5, containing 5 per cent resorcin and 10 per cent sulfur or particularly vioform ointment, ℞ 78.
3. *Psoriasis of Genitalia*.—Strong measures not tolerated. Treat as acute or subacute psoriasis. Consultation.
4. *Psoriasis of Nails*.—Treatment not ordinarily necessary but if so, salicylic acid mercury ointment ℞ 60 applied nightly for long periods. X ray therapy in exceptional cases.

Special diets are rarely helpful. In recalcitrant cases under hospital care, a low fat diet for three to four weeks may be tried. Fever or nonspecific foreign-protein therapy is rarely indicated.

Teach the Psoriatic to Live with His Disease and Not Fight It Continuously The Effects of Psoriasis on Mental Attitude and Morale Are Often More Important than the Changes in the Skin. Avoid Harm by Treatment.

no advance of eruption and symptomless, cautiously try addition of 0 1 to 1 per cent chrysarobin to ointment or shake lotion or 3 to 10 per cent liquor carbonis detergens (℞ 26)

SUBACUTE STAGE.—In addition to simplified measures

1 Ultraviolet irradiation daily or every other day in suberythema doses its effectiveness may be increased by
2. Application of crude coal tar ointment (℞ 80) night before exposure.
3 Cignolin or anthralin ointment (℞ 72) 0 1 to 1 per cent every night.

CHRONIC —General intensification of treatment.

1 Chrysarobin ointment, 1 to 10 per cent (℞ 71) Caution—Do not use on scalp or face—conjunctivitis, staining of skin and clothing Or
2. 1 to 20 per cent ammoniated mercury with 5 per cent salicylic acid ℞ 66 to recalcitrant patches, or
3 Daily general ultraviolet irradiation, preceded by application of crude oil tar ointment, ℞ 80
4 Special measures for very resistant cases include
   (a) Arsenic. Fowler s solution one to ten drops t.i.d. Not over 1 ounce in a single course.
   (b) X ray therapy Small doses (75 r) repeated once to four times To localized patches only Both these measures involve cumulative effects and are to be employed only after due consideration and when consultation is available.

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Seborrhea and Seborrheic Dermatitis

General Description.—

1 Seborrhea indicates excessive oiliness of the skin in areas most profusely supplied with sebaceous glands. A seborrheic skin is much more susceptible to infection and to eczematous changes than is a skin which is not oily Distinguish from the scaling of dry skin on face and scalp The eczematous changes are of two types

2. Greasy slightly yellow scaling in the areas of sebaceous gland concentration scalp, mid portion of face, presternal and interscapular regions (see Fig 11) And

3 Mild to severe dermatitis of above sites and the intertriginous areas of the skin surface, axillae, umbilicus, crural folds gluteal cleft. Occasional patchy involvement of the trunk and extremities occurs.

4 Seborrhea is frequently associated with acne, and is subject to endocrine influences (increase at puberty frequently subsiding with age)

5 Seborrheic dermatitis of the scalp often produces considerable itching Frequently accompanied by dermatitis behind the ear or in the external auditory canal (see Fig 52) and by blepharitis (see Fig 50)

6 Frequently confusable with or merging into psoriasis. The two diseases often coexist.

7 Often made worse by (1) excessive intake of carbohydrates or alcohol (2) poor bathing hygiene (3) chronic gastro-intestinal disturbances, (4) conditions of confining work fatigue excessive sweating and nervous stress

8. The "seborrheic state may be a predominant factor in the onset and persistence of a variety of other dermatoses, including *superficial pyoderma* chronic eczematous dermatitis associated with hypersensitivity to bacteria and their toxins, moniliasis and other yeast infections, superficial ringworm infections, "heat rashes," and rosacea Always look for the seborrheic background recognition of this background is of practical value in treatment.

Treatment. *General.*—The seborrheic skin should be washed frequently with careful rinsing of the soap from the skin. Lotions, powders, and washable emulsion type bases are much better tolerated than sticky greasy bases

Simplified Treatment

1 Sulfur resorcin lotion ℞ 8 twice daily to nonhairy skin when frank dermatitis is present.
2. Pragmatar washable ointment ℞ 14 once daily to hairy skin. In the scalp, application of this ointment once or twice weekly with shampooing the following day may be sufficient to control "dandruff"
3 If fissures are present (around ears, in crural folds, or gluteal cleft) apply 5 per cent silver nitrate solution once or twice daily
4. Complicating superficial pyoderma (Chap VIII) is common. Sulfadiazine cream ℞ 9 Look for evidence of erysipelas.
5. Low-carbohydrate diet, avoidance of alcohol.
6. Refer to hospital if pyoderma or severe eczematous changes do not respond in five days or immediately if there is evidence of systemic infection

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7 Often made worse by (1) excessive intake of carbohydrates or alcohol (2) poor bathing hygiene (3) chronic gastro-intestinal disturbances (4) conditions of confining work, fatigue excessive sweating and nervous stress.

2. The typical elementary lesion of pityriasis rosea is an oval patch with a pink, slightly raised scaling border and a lighter colored crinkly (cigarette-paper) center. The lesions tend to be arranged with the long axis along the lines of cleavage.
3. The classical distribution is over the back, chest, abdomen, arms, and thighs. However atypical distributions are relatively common—sometimes localized only to the upper abdomen and thighs, in others involving only the arms and thighs, etc. (see Fig. 2)
4. In about 35 per cent of the cases, the generalized eruption is preceded by a single herald patch.
5. It is particularly common in the spring and fall (infection due to wearing of newly purchased or long stored clothing?)
6. Itching is variable—worse with perspiration and on contact with woolen clothing.
7. Without treatment, the disease may persist six to eight weeks or more; with treatment it usually subsides in two or three.
8. Recurrent attacks of pityriasis rosea are uncommon, less than 1 per cent of cases.

Simplified Treatment

1. Always do serologic tests for syphilis.
2. If feasible, refer case to dermatologic outpatient department for ultraviolet irradiation.
3. Pragmatar ointment (℞ 14) applied two times daily. Or
4. Sulfur resorcin lotion (℞ 8) applied two times daily.

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. Castellani's carbolfuchsin paint (℞ 44) once daily to intertriginous involvement.
2. Wet dressings, as for acute dermatitis, p. 139 (℞ 11, 37 38)
3. Skin cultures, including anaerobic methods, and culture for yeasts.
4. General medical study particularly for diabetes or foci of infection.
5. X ray therapy small doses (50 r) repeated every three days.
6. Search for contributing contact allergens (medication nickel in white gold glass frames, etc) (Chap. VI) or ingestants (chocolate halogens)
7. Other local treatments of occasional value include salicylic acid—ammoniated mercury ointment ℞ 66 tar ointment ℞ 80 chrysarobin 1 to 5 per cent (℞ 71) stronger sulfur ointment (℞ 79 67) or ℞ 70 or 77
8. Scalp lotions (℞ 81 and ℞ 32) used in conjunction with ℞ 14.

Pityriasis Rosea

General Description.—

1. One of the commonest papulosquamous eruptions of the thorax. In every scaling eruption of the trunk, always consider and successively rule out pityriasis rosea, *secondary syphilis* tinea versicolor psoriasis, seborrheic dermatitis, lichen planus, and parapsoriasis (a *rare* disease which is mentioned here only for the sake of completeness) The other six diseases are relatively common

Simplified Treatment

1. Rule out syphilis.
2. Shake lotions (℞ 3 plus 4) or ointments or pastes (℞ 6, 7) as for subacute or chronic dermatitis (see p. 171)
3. Refer to hospital if itching is extreme and productive of loss of sleep and inefficiency

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

1. X ray therapy to affected sites as for dermatitis (see p 159)
2. Tar baths and ointments (℞ 80)
3. Sedation. Barbiturates preferable.
4. Course of six to eight bismuth injections, preferably an oil- or water-soluble compound. Twice weekly as in treatment for syphilis.
5. Arsenic by mouth or injection. Caution! Consultation and reference to more extended texts.

Lupus Erythematosus

There are three general types (1) localized chronic discoid, (2) disseminate chronic discoid, (3) acute disseminate—this type almost invariably fatal within five years.

Chronic Types.—

1. Erythema, adherent scaling wide-mouthed follicles with plugging atrophy and scarring in end-stage.
2. Discoid lesions, often irregular in outline.
3. Slowly progressive persistent or recurrent over a period of years.

Extended Treatment

In addition to simplified treatment

1. Suberythema doses of ultraviolet irradiation every two or three days.
2. If irritated
   (*a*) Starch baths
   (*b*) Soothing lotions

Lichen Planus

General Description—A not uncommon skin disease of unknown cause and often characteristic features.

1. Violaceous flat topped angular papules of varying size. Sometimes annular configuration (Figs. 41 83)
2. Characteristic distribution in many cases. Wrists, forearms, buccal mucosa genitalia, face clear
3. *Involvement of the penis may lead to confusion with* syphilis, and of the mouth to confusion with syphilis and leukoplakia. Lesions in the buccal mucosa (not the tongue) have a characteristic lacy appearance (Fig 93)
4. The onset may be acute and widespread Itching is usually severe.
5. *Sometimes scarring may occur especially in involve-* ment of the scalp or in hypertrophic lesions on the lower extremities.
6. As the cause is unknown the treatment is nonspecific and not too satisfactory Incidence higher in tense, nervous persons.
7. Lesions of lichen planus tend to develop at sites of scratching and other trauma. Occasionally they may occur in a zonal or neural arrangement.

Simplified Treatment

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ture record, complete blood count, evidence of endocarditis or arthritis, repeated urinalyses, foci of infection.

(c) Injections of bismuth as for syphilis. A course of at least eight weekly injections is necessary to determine whether or not this will be effective. If not, give,

(d) Weekly injections of gold sodium thiosulfate, increasing gradually from 5 to 100 mg. intravenously ℞ 81 *Caution!* Look for reaction, flare-up of lupus erythematosus, gold dermatitis, leukopenia, nephritis. Arsenicals, *e.g.*, mapharsen, in small doses may be tried.

(*e*) Soothing ointments or pastes, ℞ 5, 16 plus 8, 61. Treat concomitant seborrhea, if present.

(*f*) No ultraviolet irradiation, *ever* no x-ray therapy no wholesale removal of foci of infection.

(*g*) Local destruction of small fixed lesions—solid carbon dioxide, etc.

(*h*) Treatment over a period of months or years may be necessary often with specialized methods under direction of dermatologic consultant.

2. Acute Disseminate Type.—

(a) There is no satisfactory treatment. Protection from sunlight, general supportive therapy including small repeated transfusions, and sulfonamide therapy occasionally aid in producing remissions. See extended texts. (Consultation if possible with dermatologist or internist experienced in this disease.)

4 Localized type most frequently about face and neck often in 'butterfly' distribution over bridge of nose and malar prominences (Fig 8) in areas exposed to *sunlight* or occasionally in regions subject to repeated mild trauma or to seborrheic dermatitis.

5 The lesions vary in appearance sometimes resembling seborrheic dermatitis or papular erythema multiforme, or a beefy dull red type resembling hypertrophic lichen planus or psoriasis. Look for atrophy this is the most reliable feature distinguishing lupus erythematosus from these dermatoses

Acute Disseminate Type.—Rare in men, but a most serious and baffling disease. Always consider in any dermatosis associated with sensitivity of skin to light. The findings are numerous and varied the chief ones are blood changes (leukopenia, anemia and thrombocytopenia) endocarditis nephritis fever and prostration.

Simplified Treatment of All Types

1 Always refer to hospital as soon as possible.
2. Avoidance of exposure to sunlight. Sun protective lotion, ℞ 33 heavy paste, ℞ 7

Hospital or Sick Bay Extended Treatment

In addition to simplified treatment

Consultation with dermatologist experienced in the disease, whenever possible

1 Chronic Type —
 (*a*) Protection from sunlight.
 (*b*) Complete medical study particularly tempera

ture record, complete blood count, evidence of endocarditis or arthritis, repeated urinalyses, foci of infection.

(c) Injections of bismuth as for syphilis. A course of at least eight weekly injections is necessary to determine whether or not this will be effective. If not, give,

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CHAPTER XI

COMMON BULLOUS AND VESICULAR ERUPTIONS (EXCLUSIVE OF ECZEMA)

(Herpes Simplex, Herpes Zoster; Dermatitis Herpetiformis; Pemphigus; Erythema Multiforme Bullosum)

MANY dermatoses not ordinarily vesicular or bullous can occasionally evidence lesions of this type (lichen planus, drug eruptions, lupus erythematosus, pityriasis rosea). These are not the subjects of this chapter but have either been omitted from this manual because of their rarity or are discussed in other chapters. Eczema (including contact dermatitis) in which the cardinal lesion is a vesicle, has been dealt with in a separate chapter because of the high incidence and the complexity of this dermatosis and its management (see Chap. VI).

Herpes Simplex (Cold Sores, Fever Blisters, Etc.)

Etiology.—A virus disease, the virus being related to that of a certain form of encephalitis. The disease is caused by the presence of the virus *plus* certain trigger factors which differ from case to case. These latter include:

1. Exposure to sun.
2. Rapid rise in temperature of the patient from either natural or artificial cause (pneumonia, meningitis, etc., artificial hyperpyrexia).
3. Intercurrent infections (ordinary colds, gastrointestinal "upsets," infectious foci in teeth, sinuses, etc.).

herpes should be repeatedly examined during at least six weeks for evidence of chancre, syphilis, lymphogranuloma venereum and granuloma inguinale.

Many cases of herpes present tender and/or painful regional lymph-node involvement, which often further increases the difficulty of differentiating genital herpes from venereal diseases.

Simplified Treatment

The ordinary case of herpes will heal in about ten days and requires little if any treatment. Gentle, aseptic puncture of the vesicles and powdering with ℞ 2 plus ℞ 4, or painting with basic lotion ℞ 3 plus ℞ 4 will bring relief

In cases with decided swelling wet compresses with potassium permanganate or silver nitrate (℞ 11 and ℞ 1.) may be indicated.

When in Doubt Regarding Herpetic Lesions of Genitals, Anus, Lips, Mouth, Fingers, or Elsewhere, Examine Repeatedly with the Darkfield Method and Repeat Serologic Tests for Syphilis at Weekly Intervals for Four Months. Rule Out Chancroid, Lymphogranuloma Venereum and Granuloma Inguinale by Appropriate Skin Tests (Ducrey Vaccine, Frei Test, Etc.) and by Laboratory Investigations. Rule Out Scabies. Consider Cancer and Precanceroses When Nodules Persist.

Hospital or Sick Bay Extended Treatment

Widespread, severe and particularly *recurrent* herpes simplex may require extended treatment. This should consist of

4. Psychic and emotional upsets
5. Exposure to certain drugs
6. Ingestion of certain foods (*e g* nuts, chocolate, fish, pork)

Description.—The disease appears as minute, grouped vesicles which shoot up suddenly either on normal skin or on a reddened and somewhat swollen base. The vesicles soon burst and are followed by pinhead-sized, grouped, brownish crusts. (On the mucous membranes vesicles burst very early and one usually finds only superficially eroded areas) The attack usually heals spontaneously within about ten days, and leaves no scar unless there has been secondary infection or there have been *many attacks* in *the identical area.*

The attacks are often limited to one group of vesicles in one site, but occasionally there may be many groups or even numerous isolated vesicles. In such cases the arrangements may be irregular or may seem to follow the course of a nerve (herpes simplex zosteriformis)

(It is today believed that there is a form of severe febrile stomatitis which is due to the herpes simplex virus, but in which spirilla are also to be found and which is therefore often mistaken for Vincent s angina.)

No site is immune from herpes simplex but the favored areas are lips, nose, other parts of the face, throat, fingers, particularly thumb gluteal region and genitalia

The importance of *genital* herpes cannot be overemphasized It leads to difficulties of differential diagnoses with *venereal* diseases and other conditions which may localize on the genitals (scabies drug eruptions etc) Moreover genital herpes may serve as a *portal of entry for venereal disease* infections. Every patient with penile

herpes should be repeatedly examined during at least six weeks for evidence of chancre, syphilis, lymphogranuloma venereum and granuloma inguinale.

Many cases of herpes present tender and/or painful regional lymph-node involvement, which often further increases the difficulty of differentiating genital herpes from venereal diseases.

Simplified Treatment

The ordinary case of herpes will heal in about ten days and requires little if any treatment. Gentle, aseptic puncture of the vesicles and powdering with ℞ 2 plus ℞ 4, or painting with basic lotion ℞ 3 plus ℞ 4 will bring relief

In cases with decided swelling wet compresses with potassium permanganate or silver nitrate (℞ 11 and ℞ 1) may be indicated.

When in Doubt Regarding Herpetic Lesions of Genitals, Anus, Lips Mouth, Fingers, or Elsewhere, Examine Repeatedly with the Darkfield Method and Repeat Serologic Tests for Syphilis at Weekly Intervals for Four Months. Rule Out Chancroid, Lymphogranuloma Venereum and Granuloma Inguinale by Appropriate Skin Tests (Ducrey Vaccine, Frei Test, Etc.) and by Laboratory Investigations. Rule Out Scabies. Consider Cancer and Precanceroses When Nodules Persist.

Hospital or Sick Bay Extended Treatment

Widespread severe and particularly *recurrent* herpes simplex may require extended treatment. This should consist of

1 X ray treatment a series of ¼ skin erythema doses (75 r) to sites of recurrences, administered by a specially qualified medical officer
2. Repeated vaccinations with smallpox vaccine, administered in orthodox fashion and at weekly intervals, regardless of whether there is a "take" or not. (May stop recurrences.) Total of six to eight vaccinations.
3 Elimination of all possible trigger factors (see general remarks, p 273)
4 A course of autohemotherapy (Sometimes helpful in preventing recurrences)
5 Instruction in sun protection procedures, and the use of sun protective lotion (F 33) in cases in which sunlight plays a role
6 Vitamin C in large doses.
7 In lesions in the mouth (aphthous ulcers) application of powdered nembutal or chromic acid, 3 to 5 cent, will relieve pain markedly

These measures help prevent recurrences in many cases, but in many others the attacks continue despite all treatment.

Zoster (Herpes Zoster Shingles)

Etiology.—Probably also a virus disease, but unrelated to herpes simplex There is some evidence that many if not all cases of herpes zoster are an abortive or partially immune form of chickenpox

In contrast to herpes simplex, *recurrences* of herpes zoster are very rare.

Description.—The typical case of shingles presents no diagnostic difficulties (see Figs. 10 60) The sudden and

acute appearance of reddened and slightly elevated, roughly round or irregular patches of varying size, ranged along the course of a nerve or group of nerves, is characteristic. The plaques may appear one by one, or all come out together. The eruption may take three to four days to be complete, but sometimes new plaques will appear as long as two weeks after onset. Soon after the appearance of redness, small blisters shoot up on each area. These blisters usually develop crusts within a few days and then "scabs," which come off within about two weeks. At the end of three weeks healing has set in, sometimes with residual pigmentation, hyperpigmentation or scarring.

In younger people there may be no sensation, or varying degrees of itching or burning and sometimes neuralgic pains. In *older* persons the sensory disturbances are more common and more severe, sometimes reaching their maximum as *intolerable* and *incurable* neuralgias. These neuralgias may defy all treatment and eventually so wear down the patient that his general health and resistance to disease are seriously impaired.

Occasionally the neuralgias appear *before* the cutaneous changes. This may lead to errors of diagnosis, as the pains may simulate those of pleurisy, gallbladder colic, kidney stone colic, appendicitis, myositis, neuritis, etc. Other forms of nerve involvement are less common than neuralgias. These include hyper par and anesthesias, trophic disturbances, disturbances of sweating, salivation or urination, arthralgias and even transitory or permanent motor paralyses. Generalized involvement of the cerebrospinal axis may produce manifestations similar to those of other forms of virus *encephalitis*.

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Description.—The typical case of shingles presents no diagnostic difficulties (see Figs 10 66) The sudden and

3. Bullous zoster instead of small vesicles, bullae are formed.
4. Bilateral zoster either symmetrical or asymmetrical, extremely rare, but contrary to certain superstitions, is not fatal.
5. Generalized zoster the eruption consists of scattered, discrete papules and vesicles, and is accompanied by headache, fever and malaise. There are often also mucous membrane lesions, and the *entire picture is that of chickenpox* Only epidemiologic considerations and the presence of a concomitant typical herpes zoster following the course of a nerve permit differentiation from ordinary chickenpox.

Simplified Treatment

Ordinary uncomplicated shingles requires little or no treatment, and does not generally interfere with military duties. The lesions can be treated with dusting powder (℞ 5) or with antipruritic lotion (℞ 3 and 4) in the early stages, and with ointment base (℞ 6) or boric acid ointment (℞ 18) when drying and scaling have set in. If the itching is severe, applying a protective coating of *flexible collodion* several times daily may afford relief.

Hospital or Sick Bay Extended Treatment

Severe forms of ophthalmic zoster gangrenous zoster generalized zoster and cases with intractable neuralgias or other complications should be referred to hospital when possible In addition to the above simplified treatment the following should be instituted

All cases with trigeminal nerve involvement should have ophthalmologic examination and, if possible, be re-

nately very rare, and particularly so in youthful individuals

The common localizations of zoster (see Fig 10) are

1 An intercostal nerve
2 The trigeminal nerve (particularly the first branch, *zoster ophthalmicus*)
3 The sensory nerves of the extremities

1 Herpes Zoster Is Almost without Exception Unilateral
2. It Is Almost without Exception Nonrecurrent
3 The Visceral and General Complications and the Neuralgias Are More Important than the Cutaneous Lesions
4 Zoster Is Not Uncommon in Leukemias Other Blood Dyscrasias Poisoning by Heavy Metals (As) and Syphilis (Tabes) It Occurs Also Following Trauma and Is Sometimes Associated with Hodgkin s Disease and Visceral Malignant Tumors.

Always Investigate for These Possible Underlying Factors.

Less common forms of zoster include

1 *Gangrenous zoster* necrotic and destructive lesions a severe form which can occur in any region but is most common in the ophthalmic nerve. The cornea is frequently and sometimes severely involved Examine the eye in all cases of zoster of the ophthalmic nerve.
2. Hemorrhagic zoster *(the vesicles contain blood)*

The eruption may be difficult to diagnose, as there are many atypical and mild cases. It is extremely *polymorphous* consisting of reddened macules, wheals, papules, nodules, vesicles, bullae and pustules, and scratched and crusted lesions. These different types of lesions may all be present at once or may appear at different times. Sometimes one form of lesion or another dominates the picture.

Perhaps the most characteristic features of the eruption are

1. Chronicity and recurrence.
2. Severe itching and burning
3. *Grouping* of the lesions. Often with polycyclic arrangement.
4. Residual hyperpigmentation and sometimes depigmentation.
5. Eosinophilia, both in the blood and in the contents of the vesicles and bullae.
6. Hypersensitivity to iodides and bromides, which can bring on new eruptions, either when applied to the skin surface or administered by internal routes.

The eruption may be sparse or may cover almost the entire cutaneous surface. Although no skin areas are immune, the sites of predilection are

1. Lumbosacral area
2. Upper part of chest, abdomen, and back
3. The axillae and thighs

Simplified Treatment

Iodides, bromides, certain foods (such as chocolate, nuts, fish and pork) act as trigger factors in some cases, and should be eliminated as far as possible

ferred to the *ophthalmologist* for consultation and eventual treatment of keratitis

Wet dressings (see p 139) should be applied to swollen, painful or gangrenous lesions.

Cases with persistent neuralgias should receive x ray treatment to the affected areas and affected ganglia. (This treatment to be administered only by specially qualified medical officers.) The neuralgias should be as far as possible controlled by sedatives and opiates preferably salicylates and barbiturates, but codeine and morphine are to be used if necessary

Intravenous injections of 10 cc. of a 20 per cent solution of *sodium iodide, repeated on the second fourth* and seventh days, have been recommended by Ruggles.

Sidlick recommends 0 5 to 1 0 cc. of obstetrical pituitrin subcutaneously once daily Do not administer to patients with hypertension or to pregnant women.

Large doses of *vitamin B complex*, and *particularly of* vitamin E, have been recommended recently It is questionable if any of these measures are effective in curing the persistent and excruciating neuralgias which in some cases, and particularly in aged individuals continue and lead to a sometimes astonishingly rapid decline.

Of course all patients severely ailing with herpes zoster require bed rest and careful nursing and generalized cases should be treated with soothing baths (see p 136)

Dermatitis Herpetiformis (Duhring's Disease)

A dermatosis which is generally characterized by severe itching and sometimes burning The course is chronic, usually for years with recurrences and exacerbations. The cause is unknown.

The eruption may be difficult to diagnose, as there are many atypical and mild cases. It is extremely *polymorphous* consisting of reddened macules, wheals, papules, nodules, vesicles, bullae and pustules, and scratched and crusted lesions. These different types of lesions may all be present at once or may appear at different times. Sometimes one form of lesion or another dominates the picture.

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Simplified Treatment

Iodides, bromides, certain foods (such as chocolate, nuts, fish and pork) act as trigger factors in some cases, and should be eliminated as far as possible.

Mild cases will be able to continue on duty by using antipruritic lotions (℞ 2 and 3) dusting powder (℞ or sulfur salicylic acid, and tar cream (℞ 14) potassium permanganate baths will be found helpful in more generalized cases. Severe, widespread cases should be referred to hospitals. If recurrences continue they will probably render the individual unfit for military service.

> Consider in Differential Diagnosis Particularly
> Drug Eruptions (Chap. XIV)
> Pemphigus (p 284)
> Multiform and "Toxic" Erythemas (Chap XII)
> Widespread Bullous and Vesicular Urticarial and Papular Eruptions from External Causes, Including
> (*a*) Contact Allergens (Chap VI)
> (*b*) Insects and Other Arthropods, Etc. (Chap XV)
> (*c*) Chemical and Physical Traumas
> (*d*) Systemic Diseases (Hodgkin s, Leukemias, Thyroid and Other Endocrinopathies Visceral Malignant Tumors, Etc.)

Hospital or Sick Bay Extended Treatment

While in the hospital the patient should be put on a bland diet and the possible food trigger factors, foci of infection etc., studied and eliminated In addition to simple treatment

Endocrinologic anomalies should be sought for and corrected as far as possible (thyroid)

Baths with potassium permanganate starch tars sulfur etc., are indicated in widespread eruptions (see p 136)

Antipruritic lotions, for example, ℞ 26, and tinctures, for example, ℞ 42, should be tried in addition to remedies mentioned under "Simplified Treatment."

Among the systemic measures none is sovereign, but the following have some chance of success

1. X-ray treatment, administered to the affected parts with proper precautions and by a specially qualified medical officer
2. Intramuscular injections of *crude* liver extact, up to 5 cc. daily in the buttocks.
3. A course of sulfanilamide, sulfathiazole or sulfadiazine therapy
4. In severe cases only naphuride (formerly germanin) *Winthrop* by injection.
5. Sodium thiosulfate intravenously
6. Autohemotherapy
7. Administration of arsenicals, either as mapharsen by vein, Fowler s solution, asiatic pills, or acetarsone by mouth, or subcutaneous injections of sodium arsenate.

Sodium arsenate	2.0
Phenol	1.0
Sterile distilled water to make	100.0

Sig Inject 1 minim subcutaneously and increase by 1 minim daily until 25 to 60 minims are being given per day

Watch *for signs of arsenical intolerance, and* stop at their onset! Examine urine at least once weekly!

Differentiation of Dermatitis Herpetiformis and Pemphigus.—Dermatitis herpetiformis and pemphigus may simulate each other closely and the distinction is important, as pemphigus is generally fatal, and dermatitis

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herpetiformis almost always spares the patient's life and usually his general health.

TABLE 8.—SOME SIGNS DISTINGUISHING DERMATITIS HERPETIFORMIS AND PEMPHIGUS

Dermatitis Herpetiformis	*Pemphigus*
1 Lesions grouped	Lesions scattered
2. Lesions polymorphous	Blisters, crusts, oozing and some scaling
3. Usually eosinophilia	Often no eosinophilia
4 Recurrences and exacerbations with free intervals	Often only one attack to fatal outcome
5 Patients usually well in normal spirits	Patients often generally sick, apprehensive depressed
6. Mucous membranes usually free	Mucous membranes often affected foul breath, painful lesions etc
7 Often hypersensitive to iodides and bromides	Rarely hypersensitive to iodides and bromides
8. Often clears up with complete change of environment	Usually not affected by environment
9 Nikolsky sign usually absent	"Nikolsky" often positive (*i.e* friction of skin surface with back of thumbnail or end of wooden tongue-blade etc., causes upper layers to peel or slide off rolling up before the moving thumbnail etc., and leaving a moist surface)

Pemphigus

This disease is of unknown causation and ordinarily of fatal outcome (over 90 per cent of patients die of the disease)

There are three principal varieties of pemphigus

1 Bullous
2 Foliaceous (erythematous, oozing and desquamating)
3 Vegetans (exuberant granulations and masses replacing bullae)

The incidence of pemphigus is higher in persons of southeastern European and Mediterranean origin, and in the age groups above forty In this country Jews are more commonly affected. The disease is rare, on the whole, and will rarely be encountered in the age groups of the armed forces.

Detailed discussion is, therefore, omitted here It must be included, however among the bullous diseases to be considered in differential diagnosis (see p 282) notably for the differentiation between this eruption and dermatitis herpetiformis (Table 8) bullous erythema multiforme (p 287) and bullous drug eruptions (Chap. XIV)

A fairly accurate rule in diagnosis is that a bullous or dirty-appearing, crusting eruption in an older individual, which affects also the mucous membranes, and which persists, with new lesions constantly appearing and disappearing and often shooting up on apparently normal skin sites, is likely to be either a bullous drug eruption, a bullous toxic eruption, or pemphigus If, added to this, there are anxiety on the part of the patient, negative findings in history and general physical examination, and a positive Nikolsky sign, the diagnosis of pemphigus becomes almost certain (see Table 8)

Treatment —Must be executed in the hospital and consists largely in rendering the patient as comfortable as possible, with internal sedatives plus general supportive treatment and soothing local remedies

$KMnO_4$ or starch baths (p. 135)
Soothing lotions, ℞ 21 to 25 inclusive
Soothing and antiseptic emulsions and creams, ℞ 57 58 or 69 (with 5 per cent sulfathiazole or sulfadiazine added) ℞ 60 to 65 inclusive

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There are three principal varieties of pemphigus

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When naphuride is unavailable or proves too toxic, arsenic, either in the form of Fowler's solution by mouth, or sodium arsenate by subcutaneous injections, or maphar sen or arsphenamines intravenously should be given up to the absolute limits of tolerance (see p 283) Acetarsone has also been used.

Slight neuritis, moderate albuminuria, etc., should not be allowed to interfere with the continuation of medica tion. In this almost invariably fatal disease heroic measures are warranted.

Indefatigable Care, Kindness, and Hope Will Make the Fate of All Pemphigus Patients More Bearable and Will Help Some to Recover

Erythema Multiforme Bullosum

This disease is a form of erythema multiforme (see Chap. XII) which sometimes closely simulates dermatitis herpetiformis and pemphigus.

The diagnosis then depends upon

1 The presence of typical iris or cocade lesions in addition to the pemphigoid and bullous ones
2. The febrile, often stormy onset and recovery after a few weeks
3. The presence of polymorphous eruption of the skin, combined with a severe cheilitis and stomatitis
4. The exclusion of other bullous eruptions (see p. 288) by history and examination (including histologic findings and course)

Causation and mechanism, prognosis and treatment of the bullous form of erythema multiforme are like those of nonbullous erythema multiforme, and are covered in

Nursing and care, with cheerful and humane attitude and constant encouragement and hopeful outlook will save these miserable sufferers from despair and some times from death.

Stomatitis is often one of the most annoying lesions Treatment consisting of mouth washes (*e g* dilute hy drogen peroxide followed by Dobell s or Wadsworth s solution) Painting of the open and foul areas with 3 to 5 per cent aqueous solution of chromic acid or with meta cresol acetate (cresatin) once to twice daily and the use of covering emulsions containing anesthetics, such as benzocaine, are measures which tend to keep the pa tient more comfortable.

Gummy Emulsion

Benzocaine	5 to 10 per cent
Oil of wintergreen	0.3
Emulsion of almonds	90 0
Mucilage of acacia	10 0

Sig Use as required for rinsing mouth partic ularly before attempting to eat.

Moreover these measures lessen the foul oral odor and may even save the patient s life by relieving the distress caused by eating *Needless to say* high-caloric, high vitamin regime and whenever necessary soft diet, are to be prescribed.

Among the systemic measures naphuride (Winthrop) holds a faint hope, and should be given intravenously or intramuscularly *as soon as the diagnosis is certain* This is a potentially dangerous drug in pemphigus, but, if given early and under proper precautions, it has a better chance of saving the patient than any other remedy Di rections on the package are to be followed closely

CHAPTER XII

ERYTHEMA MULTIFORME, TOXIC ERYTHEMAS, AND INFECTIOUS EXANTHEMS

ERYTHEMA MULTIFORME

General

An acute inflammatory eruption of unknown cause. As the term "multiforme" indicates, the lesions are varied in appearance, consisting of erythematous macules, urticarial lesions (often annular) papules, nodules, and bullae. In any single case, one type of lesion tends to predominate. Color changes incident to purpura, or hemorrhage into bullous lesions, are common (iris lesions) The distribution is often characteristic (Figs. 6, 35, 36) the lesions occurring principally on the dorsa of the hands, extensor surface of the extremities, cheeks, neck (particularly on the sides and nape) buccal mucous membranes, and genitalia. The eruption may be extremely recurrent, with attacks occurring most frequently in the spring or fall. Bullae are often evidence of a severe reaction, and there may be fever malaise, and rarely a fatal outcome The cause is often undeterminable It may be streptococcic, virus (?) due to drugs, or foci of infection.

Differential Diagnosis.—Must include

1 Drug eruptions (see p 308)—phenolphthalein, barbiturates, halogens, salicylates, etc.
2. Various "toxic" eruptions rheumatic disease, tuberculids various causes of purpura

Chap XII However the bullous form is often accompanied and indeed dominated by severe stomatitis and general illness with fever and prostration Hospitalization when feasible, is indicated in all such cases.

In addition to general medical examinations and measures (Chap XII) the bullous lesions should be treated by antiseptic wet dressings, *e.g* ℞ 11 12 and 38 baths with $KMnO_4$ (p 187) and antiseptic ointments, ℞ 58 to 67 inclusive or lotions and tinctures, ℞ 21 to 26 inclusive, ℞ 33 36 40 42, 43 44

The proper care of mouth and lips may help the patient survive, by reducing the pain of ordinary eating The measures to be employed are those described for the treatment of the stomatitis and oral lesions in pemphigus (p 286)

Bland and if necessary soft diet high-caloric and high vitamin intake and all possible avenues of keeping up nutrition and general resistance are to be employed

The Principal Bullous Eruptions

1 Drug Eruptions (Especially from Iodides, Bromides, Salicylates, Barbiturates, Arsenic, Etc. See Chap XIV)
2. Bullous Forms of Pemphigus, Dermatitis Herpetiformis Lupus Erythematosus (Rare) Lichen Planus (Rare) Epidermolysis Bullosa (Rare)
3 Bullous Eruptions from Allergy to External Contact Agents, Vesicant Gases Insect Bites Arthropods, Fish Jellyfish Etc.
4. "Toxic" Eruptions (as Seen in Rheumatic Fever Hodgkin s Disease Leukemias, Internal Malignant Tumors, Etc.)

3. Thorough medical study (Damage to blood forming organs, foci of infection, tuberculosis or other systemic infections.) Postpone removal of foci until the acute attack has subsided.
4. If severe or recurrent, sulfonamides by mouth (*in cases not caused by sulfonamides*)
5. Various other measures daily intravenous injections of calcium gluconate, or Fowler's solution by mouth, or salicylates, or neoarsphenamine.
6. Mouth washes. One part hydrogen peroxide solution to two parts water 5 per cent zinc peroxide suspension, physiologic saline.

TOXIC ERYTHEMAS CHIEF CONSIDERATIONS IN DIFFERENTIATING FROM THE CUTANEOUS EXANTHEMS

It is essential that all medical officers be familiar with the following facts in reference to this important group of eruptions

1. An eruption composed of *erythematous macules* (macular or morbilliform) or a *diffuse erythematous flush, with or without "stippling"* (diffuse or scarlatiniform, both accompanied by *purpuric lesions* in some cases) calls for the following procedure in *every case*
   (a) Complete physical examination, *including mouth and throat.*
   (b) Careful history with special reference to possible exposure to the communicable exanthems, drug ingestion, and generalized symptoms such as sore throat, backache, headache, coryza, etc.
   (c) Determination of temperature.
2. The distribution is "blood stream in type"; any part

3 Lupus erythematosus, acute or chronic
4 Dermatitis herpetiformis, pemphigus (see p. 283)
5 Mucous membrane syphilis

ERYTHEMA NODOSUM

Tender erythematous, sometimes purpuric nodules most common on pretibial surfaces, occasionally on extensor surfaces of arms. May be of specific infectious cause of unknown type, or streptococcic, or tuberculous (rare in adults) or the invasive phase of various other infections (coccidioidal granuloma gonococcal sepsis, lymphogranuloma venereum) or sulfonamide eruptions (especially sulfathiazole) bromides etc.

Erythema nodosum *is sometimes confused with erythema induratum* (a tuberculid) This occurs so predominantly in young women as to make it of little importance as a military dermatosis. Tender indurated nodules which often undergo softening and necrosis, distributed principally to the calves. Differentiate atypical erythema nodosum from periarteritis nodosa (biopsy)

Simplified Treatment

The systemic implications of erythema multiforme and nodosum are such as to make hospital or sick bay study and treatment advisable in almost all cases. In mild eruptions, apply soothing lotion, ℞ 3 plus ℞ 4

Hospital or Sick Bay Extended Treatment

1 Make every effort to determine the cause. The 'symptomatic treatment of erythema multiforme and nodosum is unsatisfactory
2 In bullous lesions, wet dressings of potassium permanganate, ℞ 11 or Burow's solution, ℞ 38, drying shake lotion ℞ 23 25 Or paste, ℞ 7

Toxicum" and "Erythema [otherwise unclassified]"—respectively)

4 It is *not within the scope of this manual* to discuss in detail all of the diseases enumerated above, since complete descriptions are available in pediatric and general medical texts. However since diseases of this group must often be differentiated from other eruptions, the following elementary guide to differentiation has been included.

Scarlet Fever

1 There may or may not be a history of recent exposure (average incubation period three to six days)

2 Prodromes severe but may be variable in mild cases —*elevation of temperature* malaise, patient usually sick, vomiting *headache*, and *sore throat*

3 The eruption is a smooth, dry flush augmented by a punctate rash which often remains after the erythema has disappeared. The erythema fades on pressure and there is pallor at pressure points, such as the garters. It occurs one to five days after the onset of the prodromal symptoms, usually first appearing on the chest and back, then on the upper extremities, abdomen, and lower extremities. It is not commonly found on the face, although there is flushing of the face with circumoral pallor *The eruption may be variable.*

4. Desquamation or peeling *usually* occurs, and it may be manifest as early as the fifth day of the disease or as late as three or four weeks. It usually begins on the neck, chest, back, or tips of fingers, and is particularly marked on the palms and soles.

of the cutaneous surface may be affected in some cases only the abdomen is involved in others the extremities, etc.

3 In a broad sense, all macular, diffuse, erythematous eruptions are "toxic erythemas due to hematogenously distributed substances. Using this definition they may be classified into two types from an etiologic point of view

(a) *Toxic Erythemas of Known Origin.*—The eruption may not be present in every case.

1 *Scarlet fever*
2. *Measles*
3 *German measles.*
4 *Syphilis*
5 *Typhus fever*
6 *Rocky Mountain spotted fever*
7 *Typhoid fever*
8 *Dengue fever*
9 *Infectious mononucleosis*
10 *Rat-bite fever*
11 *Relapsing fever*
12 *Rheumatic erythemas* (accompanying rheumatic fever)
13 *Drug eruptions* (dermatitis medicamentosa) especially the sulfonamides, coal tar derivatives, barbiturates, and dilantin.

(b) *Toxic Erythemas of Unknown Origin.*—Many of these cases are accompanied by a history of tonsillitis or of intestinal symptoms In others, the eruption is the only manifestation It is for this group of cases that we reserve the diagnostic term "Toxic Erythema" (official Army and Navy nomenclature "Erythema

2. Characteristic prodromal symptoms coryza, conjunctivitis and bronchitis with metallic or brassy cough. Elevation of temperature (100 to 104 F) with generalized malaise and often acute illness.
3. The eruption is first macular the individual lesions pinhead in size. The lesions increase in size and number and become maculopapular and the color which is at first light-pink becomes progressively deeper red and by the *fifth* or *sixth day of the eruption it is light brownish.* The lesions occur two or four days after the onset of prodromal symptoms, first appearing on the *face and neck* then on the chest, progressing from above downward to involve the abdomen upper and lower extremities. The cardinal points are the abundance of the eruption on the face, its floridness, and the macular character of the lesions, which in many cases become maculopapular
4. Desquamation usually occurs about seven to ten days after the appearance of the eruption and is "branny" or fine in character Scaling of the palms and soles is not a striking feature.
5. Koplik spots (bluish-white, evanescent puncta on the buccal mucous membrane) are frequently noted one to two days before the appearance of the cutaneous eruption. Pharynx usually injected, but not so marked or so constant as in scarlet fever
6. Leukopenia is a constant feature.
7. Complications which may occur include otitis media, mastoiditis, pneumonia, and encephalitis.
8. Isolation until cessation of abnormal mucous membrane secretions. Minimum nine days (four days before to five days after appearance of rash)

5 The mucous membranes of the mouth and naso-pharynx are bright red and injected ("plush" pharynx) The tongue is coated, with beefy red papillae (strawberry tongue) Desquamation in three to four days

6 The Schultz-Charlton phenomenon is positive and is an important diagnostic procedure (*blanching* of the skin surrounding the point of injection when 0 1 to 0.2 cc. of *scarlet fever antitoxin* or *convalescent serum* is injected *intradermally* in a part of the cutaneous surface over which the suspected eruption is heavy)

7 Rumpel Leede phenomenon If the eruption is on the forearm the appearance of petechiae after the application of a tourniquet for fifteen minutes is good but not absolute evidence that the eruption is due to scarlet fever

8 *Leukocytosis* with relative increase of polymorpho-nuclear cells eosinophilia and a shift to the left is a constant finding

9 The disease varies considerably in its severity as does the incidence of complications, (mastoiditis, otitis media, suppurative cervical adenitis, nephritis, etc.)

10 Isolation until three weeks from onset or until all abnormal discharges have ceased

Measles (Rubeola)

1 There may not be history of exposure (almost all individuals who have not had the disease are susceptible) The average incubation period is ten to eleven days it may be as long as twelve days and as short as eight days

2. Characteristic prodromal symptoms coryza, conjunctivitis and bronchitis with metallic or brassy cough. Elevation of temperature (100 to 104 F) with generalized malaise and often acute illness.
3. The eruption is first macular the individual lesions pinhead in size. The lesions increase in size and number and become maculopapular and the color which is at first light pink becomes progressively deeper red and by the *fifth* or *sixth day of the eruption it is light brownish.* The lesions occur two or four days after the onset of prodromal symptoms, first appearing on the *face and neck* then on the chest, progressing from above downward to involve the abdomen, upper and lower extremities. The cardinal points are the abundance of the eruption on the face, its floridness, and the macular character of the lesions, which in many cases become maculopapular
4. Desquamation usually occurs about seven to ten days after the appearance of the eruption and is "branny" or fine in character Scaling of the palms and soles is not a striking feature.
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6. Leukopenia is a constant feature.
7. Complications which may occur include otitis media, mastoiditis pneumonia, and encephalitis.
8. Isolation until cessation of abnormal mucous membrane secretions. Minimum nine days (*four days before to five days after appearance of rash*)

German Measles (Rubella)

1 There may or may not be a history of exposure. The incubation period varies from fourteen to twenty one days, with an average of seventeen days.

2 The prodromal symptoms are usually mild and consist of mild catarrhal symptoms, slight rise in temperature—usually not over 100 F — and there may often be slight malaise and backache.

3 The eruption is macular light pink in color The lesions are usually discrete at first, although later there may be a diffuse underlying flush of the cutaneous surface. The eruption occurs one to two days after the onset of prodromal symptoms or may have a sudden onset without prodrome. Usually first seen on the face and neck, although the first site may also be the upper part of the chest, back, and shoulders. In either event, the abdomen and upper extremities ordinarily become involved later The eruption does not often involve *the entire body at one time and in most cases it* disappears in two or three days.

4 Desquamation does not occur but in a few cases punctate purpuric lesions appear after the eruption has faded (particularly over the upper part of the back and arms) and these may persist for a week or ten days.

5 There are no Koplik spots. The throat may or may not be injected Red puncta on the palate are not uncommon and are quite characteristic (Forchheimer's sign)

6 Leukopenia of some degree is usually present.

7 Complications are very uncommon—they include encephalitis, otitis media, and pneumonia.

8. Posterior cervical suboccipital adenopathy is relatively constant, one important point in differentiating German measles from measles.
9. Isolation for not less than four or more than seven days from onset of catarrhal symptoms.

Macular Secondary Syphilis

1. History may be helpful, but do not depend on it.
2. May be asymptomatic or accompanied by sore throat, slight malaise and headache.
3. The eruption is usually faintly erythematous and difficult to see. There may be or may not be papular lesions on the palms and soles. Eruption is most abundant on trunk, and *does not usually involve the face*. Lesions indolent, and unless treated may persist for weeks.
4. There is no desquamation.
5. There may be (*a*) mucous patches of mouth, pharynx, lips (*b*) moist papular penile and perianal lesions.
6. The diagnosis depends on (*a*) results of serologic tests for syphilis—they are positive in secondary syphilis in almost 100 per cent of cases. (*b*) Dark field examination, if there are any suitable lesions.
7. The necessity of making serologic tests for syphilis on all men with generalized cutaneous eruptions, macular or papular cannot be overemphasized.
8. Isolation until antisyphilitic treatment has healed all open lesions or made spirochetes *disappear* from all secretions.

Toxic Erythema (Erythema Toxicum)

1. There may or may not be history of *upper respiratory infection* including *sore throat*, or *gastro-in-*

testinal symptoms generalized malaise, and slight headache.

2 The prodrome is either absent or tends to be mild Temperature is rarely more than 101 F and usually under 100 F

3 The eruption is variable—it tends to be blotchy coarse in texture, lacks a deep basic flush, and almost always remains macular It is most abundant on the *trunk and extremities* and ordinarily all parts of the cutaneous surface are not involved in the same case In some cases the abdomen is exempt, in others, the lower extremities etc. The skin lesions persist from one to five days—if present longer than this investigate thoroughly for definite cause, such as drug sensitivity which has gone unrecognized

4 Peeling or scaling may or may not occur It is usually scanty and involves only the sites which have been affected

5 There may or may not be erosive or ruptured bullae on buccal mucous membranes.

6 *In doubtful cases isolate* the patient until a definite diagnosis can be made. Rule out all of the diagnostic possibilities enumerated above in every case. The importance of recognizing and isolating contagious diseases in military personnel is obvious. It can be done only by eternal vigilance On the other hand it is just as important to recognize toxic erythema due to unknown causes, so that men are not quarantined unnecessarily

Toxic erythema due to sensitivity to drugs (dermatitis medicamentosa) is discussed in another section (Chap XIV)

Chickenpox and Smallpox

The cutaneous manifestations of these diseases are *not* in the toxic erythema group

1. *Smallpox* is exceedingly rare in military personnel because of the rigid vaccination regulations. It is included here for the sake of completeness.
2. *Chickenpox* is not rare. The eruption is highly characteristic and will be misdiagnosed only because the disease is not thought of.
3. *Incubation period* Chickenpox, fourteen to twenty one days smallpox, eight to twelve days.
4. The *prodromal* symptoms in chickenpox are mild, with slight or moderate elevation of temperature slight headache, and vague body pains. They are severe in smallpox, especially severe backache.
5. The *eruption* in chickenpox is at first macular In a few hours it become papular and in a few more hours, vesicular (vesicles on a red base) The vesicles are thin-walled and usually discrete, though occasionally coalescent. Within two to four days, they become crusted and heal rapidly leaving a slight depression in the skin which soon disappears, provided secondary pyogenic infection does not occur Some lesions are in the crusting stage, while others are still vesicular—*i.e.*, polymorphous, in contrast to smallpox, which is monomorphous (all lesions in same stage) The *distribution* of the chickenpox lesions is centripetal, the lesions tending to occur only on the trunk and face, in contrast to smallpox, which is centrifugal, the lesions being much more abundant on the palms and soles and other parts of the extremities

6 Chickenpox is not a serious disease. It is not necessary to comment on the seriousness of smallpox

7 Secondary bacterial infection is not infrequent in chickenpox, especially if the patient does not refrain from scratching The treatment is similar to that outlined for impetiginous dermatitis (see p 228)

8 Chickenpox Isolate no longer than ten days after eruption

Smallpox Isolate from appearance of first symptoms to disappearance of all scabs and crusts.

CHAPTER XIII

URTICARIA, INCLUDING GIANT HIVES OR ANGIONEUROTIC EDEMA

General Considerations

Urticaria (hives) occurs in acute or chronic forms. The former is common and affects about half of all individuals at some time during their lives. There may be one attack or numerous attacks, at regular or irregular intervals. The chronic type of urticaria is fortunately rare, as it is much more serious than the acute attack, and may last for months or years and prove refractory to all treatment. When chronic urticaria is severe, it may constitute a more or less permanent disability necessitating discharge from the military service.

In ordinary urticaria, both acute and chronic forms, the lesions consist of wheals. These lesions vary in color from dead white to pale yellow, pink, or red, and in size from pinhead to over palm-sized. They may or may not be surrounded by a red halo (flare). *Itching* is usually the presenting symptom, but can vary from practically zero to most distressing and severe continuous pruritus. It sometimes robs the patient of sleep and wears him down.

The wheals may be many or few, discrete or grouped, widely disseminated or confined to certain areas, and of many different shapes and arrangements.

The sites of predilection are the pressure areas—belt, tips of shoes, suspenders, garters, etc., but no area is immune.

Perhaps related to chronic urticaria is the dermatosis known as *giant hives* or *angioneurotic edema* in which the swellings are larger deeper less sharply marginated and often of longer duration than in simple hives. Giant hives are much more likely than is ordinary urticaria to affect the mucous membranes (lips, mouth, throat, larynx, penis)

Swellings of the larynx *may cause death* unless proper intervention is prompt. All patients with giant hives should therefore have adrenalin handy and know how to administer it. Nursing personnel and physicians should be prepared to *give adrenalin* at the first signs of swelling of the larynx and of dyspnea. Tracheotomy may be necessary as a last resort.

It is considered probable today that urticarial swellings of the skin and particularly giant hives, may be accompanied by similar lesions in the viscera, and that these may produce a variety of symptoms ranging from epileptiform seizures, Ménière s syndrome migraine papilledema transitory blindness, vomiting gastric distress, to attacks simulating gallbladder or kidney-stone colic or appendicitis.

Differential Diagnosis

While urticaria is the only disease in which the wheal is the *sole* lesion many other dermatoses present wheals as one of their features It is therefore important to differentiate these other dermatoses with wheals from ordinary urticaria. They include

1 Dermatitis herpetiformis (Chap XI)
2 Pediculosis (Chap XV)
3 Scabies (Chap XV)
4 Insect bites (Chap XV)

5. Dermatitis from fish, jellyfish, etc.
6. Certain plant dermatoses
7. Dermographism (urticaria factitia—whealing on stroking of skin)
8. Serum sickness and other eruptions following administration of *biologic* drugs (vaccines, virus, skin tests, etc.)
9. Drug eruptions (Chap XIV)
10. Erythema multiforme, and toxic erythemas (Chap. XII)

Simplified Treatment

Acute Urticaria.—Acute urticaria is easy to cure for it is a self limited disease, the attack subsiding within a few hours to one to two weeks. The following measures may be used to hasten improvement and provide relief

1. Purging Preferably with calomel (2 grains) followed by a saline cathartic the following morning
2. Force fluids
3. Eliminate all medication not essential to the patient's life.
4. Eliminate suspected drugs and foods, especially those on the following list

Foods	Drugs
Shellfish	Quinine
Fish (including cavia etc.)	Ipecac
Strawberries	Salicylates (aspirin, etc.)
Cheese	Barbiturates
Nuts	Pyramidon derivatives (pyramidon, antipyrine, etc.)
Eggs	Iodides (including iodized salt)
Wheat	Bromides
Milk	Phenolphthalein
Pork and pork products	Morphine and other opium derivatives
Chocolate	Epinephrine
Alcoholic beverages	Phenacetin

5 For temporary relief administer epinephrine 3 to 4 minims intracutaneously or 10 to 15 minims subcutaneously (especially when the itching is severe or there is larynx edema)

6 Ephedrine and barbiturate (separately or in combination) Sometimes beneficial but beware of exacerbations due to these drugs.

7 In severe itching baths with cornstarch, etc. (see p 136)

8. Antipruritic lotions and tinctures painted on as required—℞ 3 and ℞ 4

9 Basic powder—℞ 2 with 1 camphomenthol powder (℞ 4) added to each 100 cc.

> In All Cases of Urticaria Think of Drugs, Serum or Vaccine Injection and Insects as Possible Causes. Rule Out Scabies and if in Doubt, Try Treatment for Scabies (See p 330) When Possible, Refer Chronically Affected Patients and Especially Those with Large Swellings to the Hospital

Hospital or Sick Bay Extended Treatment

Chronic or Giant Urticaria.—In addition to the simplified treatment outlined for acute urticaria

1 The most exhaustive painstaking and repeated elicitation of the history to try to correlate the incidence of eruption with certain other factors such as exposure to heat, effort stroking cold sun foods, drugs, etc.

2. Elimination diet This can be carried out by keeping the patient on one article of nourishment, such

as, for example, milk or orange juice, for several days, and then adding other foods item by item and observing the effect. Or the elimination diets of Rowe and others can be followed.

3. The search for possible causal drugs should be indefatigable (see "Drug Eruptions," Chap. XIV)
4. Allergens which are inhaled must also be considered and eliminated (feathers, wool, animal danders, ordinary house dust, etc.)
5. Parasitic infestations must be looked for and, if found, eliminated (examinations for blood eosinophilia of stool, for ova and parasites of perianal region for pinworms, etc.)
6. Foci of infection to be sought and treated medically or surgically (These include foci of fungous infection of the *skin*, focal abscesses of the teeth, and all foci in the viscera.)
7. General and exhaustive medical examination and appropriate treatment. Include particularly examination for Hodgkin s disease, blood dyscrasias, occult infections (malaria, brucellosis, etc., liver and gallbladder disease, thyroid disturbance, psychic and emotional factors)
8. In chronic cases the following symptomatic treatments are indicated
   (a) Administration of thyroid in small doses.
   (b) Administration of gastro-intestinal adsorbents (activated charcoal, kaolin, etc.)
   (c) Injections of *crude* liver extract (up to 5 cc. intramuscularly every day or every *other* day)
   (d) Dilute hydrochloric acid by mouth, 15 to 20 minims, preceding each meal, and in the middle of each meal.

5 For temporary relief administer epinephrine 3 to 4 minims intracutaneously or 10 to 15 minims subcutaneously (especially when the itching is severe or there is larynx edema)
6 Ephedrine and barbiturate (separately or in combination) Sometimes beneficial but beware of exacerbations due to these drugs.
7 *In severe itching* baths with cornstarch, etc. (*see* p 186)
8 Antipruritic lotions and tinctures painted on as required—℞ 3 and ℞ 4.
9 Basic powder—℞ 2 with 1 camphomenthol powder (℞ 4) added to each 100 cc.

In All Cases of Urticaria Think of Drugs, Serum, or Vaccine Injection and Insects as Possible Causes. Rule Out Scabies and if in Doubt, Try Treatment for Scabies (See p 330) When Possible, Refer Chronically Affected Patients and Especially Those with Large Swellings to the Hospital

Hospital or Sick Bay Extended Treatment

Chronic or Giant Urticaria.—In addition to the simplified treatment outlined for acute urticaria

1 The most exhaustive painstaking and repeated elicitation of the history to try to correlate the incidence of eruption *with certain other factors*, such as exposure to heat effort, stroking cold sun foods, drugs, etc.
2. Elimination diet. This can be carried out by keeping the patient on one article of nourishment such

CHAPTER XIV

DRUG ERUPTIONS

General Considerations

This is one of the most important chapters of modern dermatology for both the causal drugs and the dermatologic manifestations they produce are today encountered in almost limitless number and varieties. In the majority of drug eruptions, the principal untoward effects are due, *not* to *poisoning* or *toxicity* but to a peculiar susceptibility or *allergy* on the part of the skin of the particular individual. Thus, many drugs cause dermatoses only in certain susceptible persons, while other persons remain entirely free from skin manifestations when exposed to the same doses of the same medicaments.

The cutaneous changes produced by drugs range from the mildest itching or insignificant erythema to the most tenacious, severe, incapacitating and sometimes fatal eruptions.

Moreover almost *every* known cutaneous entity can, on occasion, be mimicked, elicited, or caused to recur or to exacerbate by drugs. Therefore, a complete presentation of eruptions in which drugs play a causal or contributory role would encompass practically all of descriptive dermatology

However some types of skin changes are more frequently attributable to drugs than are others and certain drugs evidence a decided predilection for producing certain characteristic pictures.

(e) Autohemotherapy (Remove 20 cc. of blood from the cubital vein and reinject immediately deep *into the buttock. Repeat every other day for* two weeks before giving up.)

(f) Vitamin C in large doses by mouth

(g) Histamine desensitization (intracutaneous or subcutaneous injections of very small but ascending doses daily)

9 Skin tests and specific desensitization procedures based on them are ordinarily useless

In All Chronic or Severe Cases of Ordinary or Giant Hives Drugs Are the First Suspects, and Salicylates Headache Medicines, Sedatives, and Soporifics Account for Most of These Cases. Make It a Rule to Eliminate *All* Nonessential Drugs in *All* Cases of Urticaria In Atypical Cases Think of Scabies and Treat as Scabies if There Are Grounds for the Slightest Suspicion Never Neglect the Most Complete Medical Check Up in Every Chronic Case Some Chronic Cases of Hives Will Continue Unabated despite All the Above Measures. If These Eruptions Are Severe and Refractory a Medical Discharge from the Service May Be Indicated.

Bullous and vesicular dermatoses, pemphigoid dermatoses (sometimes fatal)

† Erythema nodosumlike and erythema *multiformelike*.

Ecthymalike and ulcerative dermatoses (sometimes fatal)

† Tuberous and fungating dermatoses, neoplasmlike tumors (sometimes f tal)

The circumscribed bromodermas have been reported to simulate

† 1. Erythema nodosum.
2. Deep and ulcerative fungous infections (kerion cells)
3. Tuberculosis (erythema induratum, tuberculosis fungosa, lupus verrucosa)
4. Syphiloderms (ulcerative tertiary syphilids of skin or mucous membranes)
† 5. Coccidiosis, blastomycosis, sporotrichosis.
6. Rhinophyma rosacea.
7. Pemphigus vegetans (sometimes fatal)
8. Neoplasms.

Iodi and Iodides

Generalized forms (as from bromine)

† Acneform eruptions, furunclelike eruptions.

Purpuric eruptions.

Iododerma tuberosum.

Circumscribed and diffuse edemas and erythemas.

M rbilliform and scarlatinaform eruptions.

Bullous eruptions pemphigoid dermatoses (sometimes fatal)

† Multiform and nodose erythemas.

Eczematous ruptions.

Urticarias.

Angioneurotic edemas (sometimes fatal)

Pustula variola- and vaccinia-like eruptions (sometimes f tal)

Purpuras and hemorrhages (sometimes f tal)

Gangrenous dermatoses

† *Tumorlik* fungating, and mycosis fungoideslike eruptions.

Forms resembling syphilis tuberculosis, blastomycosis, etc., and even resembling neoplasms (sarcoma- nd carcinoma like) (sometimes fatal)

Quinine

Localized nd generalized

† Eczematous dermatoses.

† Eczematoid dermatoses.

This symbol (†) preceding the descriptive name denotes that the manifestation is among the more common of the reactions produced by the particular drug.

The following tables, 9 and 10 list the drugs most commonly causing dermatoses, together with the changes each drug is most likely to produce.

TABLE 9.—COMMON DRUGS CAUSING ERUPTIONS AND CHARACTERISTIC FORMS OF ERUPTIONS

Arsenic

Plantar and palmar erythemas.
† Localized and general eczematous and eczematoid eruptions.
Erythema nodosumlike psoriasiform lichen planuslike para psoriasislike, and pityriasis roscalike eruptions.
† Erythemas urticarial multiform and scarlatiniform eruptions.
† Erythrodermas.
† Exfoliations (localized and generalized)
Acute vesicular dermatitides.
† Arsenical pemphigus (bullous)
Pustules, necroses and gangrene (usually from exogenous exposure)
Purpura ecchymoses, particularly bullous and hemorrhagic dermatoses.
† Palmar and plantar keratoses, corns, warts, other keratoses and multiple superficial epitheliomas.
† Lichen spinulosus, follicular hyperkeratoses
Loss of hair loss of nails nail changes.
† Circumscribed and diffuse melanodermas and leukodermas.
† Hyperhidrosis (plantar and palmar—and of other areas)
Herpes zoster (ordinary forms and gangrenous)
Sclerodermatic changes, adiposities.
† Vasomotor disturbances, pallor blushing "Raynaud's disease acrodynias.
† Neurologic changes—neuritis neuralgia formication, paresthesia, hyperesthesia pain.
Mucous membrane changes—conjunctivitis rhinitis, stomatitis, pharyngitis.
Perforated septum (usually exogenous, from inhalation)
Generalized melanoses.

Bromine and Bromides

† Acneform eruptions furunclelike eruptions.
Generalized exanthems—roseolalike rubeolalike urticarial bullous, eczematous and eczematoid.

This and the following table are from Sulzberger Marion B Dermatologic Allergy Springfield, Ill., Charles C Thomas 1940

† This symbol (†) preceding the descriptive name denotes that the manifestation is among the more common of the reactions produced by the particular drug

Multiform erythemas.
Fixed eruptions.
Bullous dermatoses.
† Multiform and bullous eruptions f mucous membranes.
† Nirvanol disease dilantin gingivitis.
General manifestations, blood dyscrasias (sometimes fatal)

Sulfonamides (see Table 11)

TABLE 10.—SOME COMMON DERMATOSES AND THEIR MOST FREQUENTLY CAUSAL DRUGS

1. Purely eczematous eruptions (Chap. VI) with erythema, papulation, vesiculation, weeping, and scaling (quinine procaine other local anesthetics, ephedrine, mercurials, formalin, sometimes arsphenamines, etc.)
2. Urticaria and angioneurotic edema (Chap. XIII) (salicylates, barbiturates, belladonna, atropine, iodides, bromides, the opium group phenolphthalein)
3. Scaly eruptions, purely erythematous or scarlatiniform and morbilliform dermatitis exfoliativa (arsenic, arsphenamine belladonna, balsams, heavy metals, irvanol, salicylates, sulfonamides, etc.)
4. Erythema multiformelike eruptions (Chap. XII) (phenolphthalein, tipyrine salicylates, barbiturates, other soporifics, sulfanilamide sulf pyridine etc.)
5. Erythema nodosumlike eruptions (Chap. XII) (iodides, bromides, salicylates, sulfathiazole)
6. Acneform (Chap. IX) furunculoid and erysipelaslike eruptions (Chap. VIII) (bromides, iodides chlorine, oils, tars, etc.)
7. Pemphigoid and ulcerating and vegetating eruptions (bromides, iodides)
8. Purpuric eruptions (iodides, arsphenamines particularly sulfarsphenamine, carbamides (sedormid) barbiturates, balsams, sulfonamides, etc.)
9. Lichenoid and lichen planus-like eruptions (arsenic, arsphenamines, gold, etc.)
10. *Fixed* and circumscribed, erythematous, edematous or bullous and *polychromatic pigmented* eruptions (phenolphthalein, antipyrine phenacetin, barbiturates, salicylates, the arsphenamines, gold, sulfanilamide) (All so-called "fixed eruption tend to recur in situ.)

† This symbol (†) preceding the descriptive name denotes that the manifestation is among the more common of the reactions produced by the particular drug.

† Edemas and erythemas.
Scarlatiniform and morbilliform eruptions.
Urticarial dermatoses.
Purpuric dermatoses (sometimes fatal)
Fixed eruptions.
Melanodermas.
Bullous lesions of the mucous membranes (also asthma, rhinitis) (sometimes fatal)

Salicylates
Eczematous dermatoses.
Scarlatiniform and morbilliform dermatoses
Erythemas and edemas.
† Angioneurotic edema.
† Urticaria and urticarial dermatoses.
† Multiform erythema erythema nodosumlike eruptions.
Conjunctivitis.
Bullous and pemphiguslike eruptions (sometimes fatal)
Dyshidrosislike eruptions.
Purpuras and hemorrhagic eruptions.
Fixed eruptions.
† Asthma rhinitis constitutional reactions (sometimes fatal)

Beware of salicylates in atopic patients and especially in asthmatics!

Phenolphthalein
† Fixed eruptions of characteristic course and appearance.
Bullous and pemphigoid eruptions and multiform erythemas.
Urticarial eruptions.
Eczematous dermatoses.

Antipyrine
† Fixed eruptions (similar to those due to phenolphthalein)
Morbilliform and scarlatiniform eruptions.
Pemphiguslike and multiform erythemalike eruptions.
Hemorrhagic eruptions.
Urticarial dermatoses.

Pyramidon
In general like antipyrine
† Blood dyscrasias (sometimes fatal)

Soporifics Barbiturates and Other Urea Derivatives Sulfonal Etc
† Morbilliform scarlatiniform and urticarial eruptions.
† Purpuric and hemorrhagic dermatoses.

† This symbol (†) preceding the descriptive name denotes that the manifestation is among the more common of the reactions produced by the particular drug.

they produce are today among the most commonly encountered drug reactions.

Many of the *cutaneous manifestations of hypersensitivity to sulfonamides are mild and evanescent* and some disappear even while the patient is still under exposure to the causal drug (see following remarks on arsphenamine reactions) But a decided cutaneous reaction calls for cessation of medication unless interruption of the specific medication would constitute a considerable degree of danger to the patient (*e g.*, in some pneumonias, sepsis, meningococcus meningitis, threatened mastoiditis, etc.)

Some patients will be intolerant of all sulfonamides, while other patients will tolerate some members of the sulfonamide group though highly intolerant to other members. Therefore, just as in attempting to resume arsenical medication, if sulfonamide treatment is imperative it is well to *switch* sulfonamide preparations whenever this is possible. Moreover whenever possible, resumption of therapy should be exceedingly cautious, commencing with very small doses (0 1 to 0.3 gm.) and then waiting and observing their effects before gradually increasing until the therapeutically effective dose is reached.

While any and all of the sulfonamides can cause almost every known form of drug reaction and drug dermatitis, some representatives are more likely than others to cause certain types of reaction

The following table indicates the diversity of the common sulfonamide sequelae the relative predilections of the different drugs for producing certain dermatoses and other manifestations, as well as the relative seriousness of various visceral and systemic manifestations. (For all further information on sulfonamides, see Technical Manual 8-210.)

Sulfonamide Sensitivity.—There is increasing evidence that the sulfonamides have a certain sensitizing capacity Some authors state that approximately one-third of all patients treated with sulfonamide drugs develop a sensitivity which may interfere with their subsequent use on these patients (fever erythema pruritus, conjunctival injection) This sensitivity cannot be demonstrated by any of the standard methods of skin testing, using pure sulfonamide bases or their salts.

It is of practical importance to keep in mind that with the sulfonamides, as with many other substances, there is an incubation period *i e* a lag between the original administration and the first signs of sensitivity Sulfonamide sensitivity requires an average of five to nine days to develop and may persist for years. We have evidence to indicate that sensitivity may be produced by the *local* application of sulfonamide compounds as well as by oral administration, though this apparently does not occur frequently unless the period of application of the sulfonamide is fairly prolonged (over four days) *Local* application may sensitize so that the eruption appears on *internal* administration and vice versa It is evident that on the score of possible induced sensitivity as well as for many other obvious reasons, oral or local sulfonamide therapy should not be undertaken without justification The use of sulfonamide ointments should be reserved for frank acute pyoderma and should not be continued for long periods of time *It is questionable whether such* ointments should be applied in purely eczematous dermatoses, fungous infections, or in those in which the element of infection is only secondary *e g* acne

In consideration of the widespread use (and sometimes abuse) it is not astonishing that the eruptions

they produce are today among the most commonly encountered drug reactions.

Many of the *cutaneous manifestations of hypersensitivity to sulfonamides are mild and evanescent* and some disappear even while the patient is still under exposure to the causal drug (see following remarks on arsphenamine reactions) But a decided cutaneous reaction calls for cessation of medication, unless interruption of the specific medication would constitute a considerable degree of danger to the patient (*e.g.*, in some pneumonias, sepsis, meningococcus meningitis, threatened mastoiditis, etc.)

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TABLE 11.—ALLERGIC AND TOXIC DERMATOSES AND OTHER MANIFESTATIONS WHICH MAY BE DUE TO SULFONAMIDES*

Manifestation	Sulfanilamide	Sulfapyridine	Sulfathiazole	Sulfadiazine‡	Clinical Significance and Procedure
Dermatoses†	*Common* Morbilliform Erythematous and crusting Scarlatiniform Urticarial Multiform erythemalike Purpura (occasional) Photosensitization dermatoses (common) (eruption appears after exposure to light and at exposed sites)	*Occasional* Morbilliform Erythematous and crusting Scarlatiniform Urticarial Multiform erythemalike Purpura (rare) Photosensitization dermatoses (occasional)	*Common* Morbilliform Erythematous and crusting Scarlatiniform Urticarial Multiform erythemalike Erythema nodosum Photosensitization dermatoses (occasional)	*Uncommon* All the eruptions can occur but all are rare	Some are mild, do not require discontinuance of drug Others severe, dangerous, require stoppage of drug (see p. 316)
Cyanosis	Common	Occasional (not severe)	Doubtful	Rare	Not serious
Nausea and vomiting	Common	Frequent	Occasional	Uncommon	If severe discontinue drug
Headache and dizziness	Common	Common	Rare	Rare	Not serious
Psychoses delirium	Uncommon	Uncommon	Very rare	Very rare	If severe discontinue drug
Acidosis	Occasional	Unreported	Unreported	Unreported	Give alkali
Drug fever	Common	Uncommon	Common	Uncommon	May be serious; discontinue drug
Hepatic damage	Common	Rare	Doubtful	Unreported	May be serious; discontinue drug
Jaundice	Common	Rare	Rare	Rare	May be serious; discontinue drug
Moderate anemia	Common	Common	Occasional	Rare	Not serious; transfuse, if necessary
Acute hemolytic anemia	Occasional	Rare	Unreported	Unreported	Serious; discontinue drug; give alkali; transfuse
Leukopenia	Common	Common	Occasional	Rare	May be serious; discontinue drug
Granulopenia	Occasional	Occasional	Rare	Rare	May be serious; discontinue drug
Agranulocytosis	Occasional	Occasional	Very rare	Unreported	Serious; discontinue drug
Marked leukocytosis	Uncommon	Uncommon	Unreported	Unreported	Not serious alone
Hematuria	Doubtful	Common	Common	Rare	If macroscopic discontinue drug

Oliguria and nitrogen retention	Doubtful	Occasional	Occasional	Rare	Serious; discontinue drug, alkalinize urine, force fluid
Arthritis	Unreported	Unreported	Occasional	Unreported	May be serious, discontinue drug
Conjunctivitis and scleritis	Unreported	Unreported	Occasional	Rare	May be serious, discontinue drug
Visual disturbances	Very rare	Doubtful	Unreported	Unreported	May be serious, discontinue drug
Hematuria	Unreported	Rare	Rare	Unreported	May be serious, discontinue drug
Anemia	Rare	Unreported	Rare	Unreported	May be serious, discontinue drug
Splenomegaly	Occasional	Doubtful	Occasional	Unreported	May be serious, discontinue drug
Hepatomegaly and [illegible]	Rare	Unreported	Unreported	Unreported	May be serious, discontinue drug
Thrombocytopenic purpura	Unreported	Very rare	Unreported	Unreported	May be serious, discontinue drug

From [illegible], W. W., Sulfonamides and Related Compounds in General Practice, [illegible] based on table from Dermatologic Therapy, 2nd edition, 1941, Year Book Publishers.

† The drugs differ in their predilection for producing different patterns. Thus, sulfathiazole tends to produce conjunctivitis and erythema [illegible] like eruptions more than the other members of the group; sulfadiazine [illegible] most likely to cause [illegible]. Furthermore, because many patients who do not tolerate one member of the series will be able to take others well, [illegible] is of great importance [illegible] not tolerate the others, some [illegible] of one of the drugs [illegible] that almost all cases of intolerance have appeared before the fourteenth day of administration.

‡ It will be noted that "occasional," "rare," and "unreported" appear most frequently in the sulfadiazine column. This may well be owing to lesser toxic or allergenic properties of this drug, or may be owing to its [illegible] of relatively restricted use.

The More Dangerous Sulfonamide Eruptions Are t Purpuric and Hemorrhagic the Icteric and the Ge eralized Exfoliating and Crusting Ones and, of Cour Those Associated with Reactions in Other Organs, e the Blood Forming Organs, Kidneys, Liver Etc.

Diagnosis.—

In the management of drug eruptions, *the medical ficer should*

1 *Have a high index of suspicion.*
   (a) Always suspect the causal or contributory *of drugs in any eruption of unknown ca*
   (b) Always suspect the causal or contributory r of drugs in any atypical inexplicable chro or recurrent dermatosis.
   (c) Suspect drugs particularly in urticarial er tions (Chap XIII) morbilliform and sc latiniform eruptions purpuric eruptio generalized and patchy scaly erythematous eczematous eruptions multiform erythen (Chap XII) bullous eruptions (Chap X acneform and furunculoid eruptions (Ch IX) fixed, circumscribed red purplish, b ish or pigmented isolated or scattered rou or oval patches which recur and exacerb at regular or irregular intervals (*fixed er tions*)
2. *In the presence of any skin disease remove all u necessary or suspected drugs*
   (a) In every persistent dermatosis, *stop the use* all drugs which are not absolutely essential the patient s health or life

(b) Include in his investigation all remedies applied, ingested, injected, inhaled, or otherwise administered.

(c) Include in his questioning all prescriptions, patent medicines, and proprietaries which the patient may himself be using

(d) Question the patient systematically over and over again the line of questioning to be guided, more or less, by the appearance and course of the eruption (see Tables 9 10 and 11)

The diagnosis of drug eruptions usually depends on the following four cardinal points

1. Recognition of the presenting dermatosis as one which points suspicion to a certain drug or drugs (Tables 9 10 and 11)
2. Demonstration of actual exposure to the suspected agent at some time not too remote from that of the onset, or of the recurrence or exacerbation, of the eruption. *Usually* a few minutes to hours, up to five to fourteen days elapse between the exposure to the drug and the occurrence of the skin manifestation (five to fourteen days represents the incubation period of sensitization) However drugs can often be taken with impunity for many years, and then suddenly begin to cause ill-effects.
3. Demonstration of improvement or cure following elimination of the suspected drug or drugs. (Sometimes the changes persist and even progress, for weeks, months, or years after the last exhibition of the causal drugs [*e.g.*, arsenicals, bromides, and iodides, etc.] Nevertheless, it is the rule for drug

eruptions to improve within a few weeks after cessation of exposure)

4 Production of recurrences or exacerbations by reexposure to the suspected drug or drugs This procedure is (*a*) usually unnecessary since the etiologic role can generally be proved by 1 2, or 3 above (*b*) not without danger in extremely hypersensitive patients and (*c*) not infallible, since many patients may evidence certain periods of refractoriness during which reexposure to an actually causal drug does *not* reproduce the symptoms Reexposure should therefore be tried only when establishment of the causal drug is imperative and impossible by other means.

1 In All Dermatologic Patients Always Suspect the Possible Role of Drugs, and Then Strictly Eliminate All the Possible Drug Suspects—and See What Happens.

2 No Patient with an Obscure or Persistent Skin Disease Should Be Allowed to Take Even a Single Dose of a Medicament unless There Are Absolute Indications for Its Use

3 Even the Occasional Use of Very Small Doses of Such Ordinarily Harmless Remedies as Aspirin, Laxatives, Sedatives, Cold Syrups, Headache Powders, Etc., May Be the Cause of Many Persistent, Baffling and Sometimes Incapacitating and Dangerous Eruptions

Skin tests are usually of little or no value in the attempt to discover the causal *drug* or to prove its role (Possible exceptions are purely eczematous eruptions due to quinine, formaldehyde [patch tests, Chap VI] etc some

urticarial eruptions [scratch tests] and some acneform or fungating eruptions [patch or inunction tests with bromides or iodides])

The demonstration of the suspected drug in *tissues fluids* or *excreta* can prove only the fact of exposure, and *cannot prove the causal significance* of the particular drug

It is noteworthy that many drug eruptions occur without manifest involvement of any part other than the skin. However there are numerous cases in which the cutaneous lesions *are associated with signs and symptoms elsewhere* and attributable to the same drug

The following are among the many systemic or local noncutaneous reactions which may be manifestations of untoward effects of drugs, and which *may* or *may not* be associated with skin lesions

Fever headache, malaise, migraines, epileptiform reactions, Ménière s syndrome, tinnitus, visual disturbances, papilledema, iritis, stomatitis, granulocytopenias, hemorrhages, purpura with or without thrombocytopenia, pictures resembling leukemias, Hodgkin s disease, etc. arthralgias, neuralgias, neuritis, tremors, paralyses cardiac arrhythmia, myocarditis, other cardiovascular changes, including periarteritis nodosa icterus, hepatitis, acute liver atrophy cirrhosis, kidney damage of various kinds, both acute and chronic cystitis.

The above, only a *partial* list, demonstrates that the ill-effects of drugs are *just as diversified in the viscera as in the skin* and that a *high index of suspicion for possible drug caus s* is probably as important in *internal medicine* and in *other specialties* as it is in dermatology

However in the skin changes the expert will often recognize a clue as to the possibly causal drug—and

agent causing the accompanying and previously baffling systemic or visceral disease

Simplified Treatment

1 Discover and eliminate the drug use every trick and finesse of examination and cross-examination to establish the culpable exposure (see above)
2. Try to speed up elimination by forcing fluids, diuresis etc.
3 In severe eruptions due to iodides or bromides, force large quantities of sodium chloride (as in heat prostration)
4 Treat the acneform eruptions *locally* as acnes the furunculoid ones as furuncles the eczematous ones as eczemas or dermatitis the urticarial ones as urticaria angioneurotic edema etc.
5 Treat itching irritated, bullous etc., eruptions with soothing remedies locally *i e*
   Baths (p 136)
   Powders and lotions (℞ 5 ℞ 3 ℞ 3 plus ℞ 4)
   Ointments (℞ 6 ℞ 16 ℞ 18 if necessary plus ℞ 4 to each 100 cc. of ointment)

Potentially Dangerous Drug Eruptions Include

Bullous (Pemphigoid) Eruptions Oozing Reddened Arsenical Eruptions, Especially When Starting in the Flexures Purpuric and Hemorrhagic Eruptions Drug Eruptions with Headache, Malaise, and Fever Eruptions Accompanied by the Manifestations Mentioned on Page 323 These Are Potentially Dangerous and Should Be Referred to Hospital Whenever Possible. (Always Examine Patient Thoroughly Including Complete "Physical" Blood Count, Urine Etc.)

Indications for Hospitalization.—Some patients will require removal to hospital, either because the cause can not be discovered, or because the eruption persists even after the causal drug is removed, or because the eruption is one that is connected with internal and serious complications.

Among the latter group are

1. Widespread, eczematous, crusty or exfoliating eruptions, such as those produced by arsenicals, gold salts, mercurials, and sometimes by sulfonamides, salicylates, barbiturates, iodides, etc. (see below)
2. Purpuric and hemorrhagic eruptions (arsenicals, sulfonamides, etc.)
3. Bullous and pemphigoid eruptions (iodides, bromides, salicylates, etc.)

Persistent furunculoid or severe acneform eruptions, fungating eruptions, morbilliform and scarlatiniform dermatoses eruptions accompanied by fever or headache, and those asociated with any form of visceral reaction, are also best treated in the hospital, when possible.

Hospital or Sick Bay Extended Treatment

1 Intensification and extension of the search for the causal drug provided this has not already been discovered. Intensification of therapy
   (a) Examine the patient's kit and bag, and question for patent medicines and nostrums. (Consider also toilet articles, tooth pastes, mouth washes foods [iodine in salt preservatives and artificial coloring of foods, etc.] eyedrops, nasal drops and sprays, suppositories, etc. venereal disease prophylactics, etc.)

(b) Whenever possible, try interruption of medication of every sort *for several weeks*

(c) Speed up elimination of any drugs which may have been ingested by

1 Forcing fluids.

2. Enemas and/or safe cathartics.

3 If necessary and as indicated by the medical findings, glucose, saline, or blood plasma infusions

(d) General and specific detoxifying measures.

1. Liver extract, *crude* (up to 5 cc. intramuscularly daily) Vitamin B complex in other forms, such as yeast and various oral preparations.

2 Sodium thiosulfate injections (recommended by some, especially for *arsenical* dermatoses by no means all observers are in agreement as to its efficacy)

3 Glucose and appropriate diet in icteric eruptions.

4 Vitamins C and K, in large doses, in *purpuric* and *hemorrhagic* eruptions treatment as for purpura from other causes, or for idiopathic purpuras Obtain prothrombin time.

5 Iron liver etc., in the presence of anemia, etc. Pentnucleotide in granulocytopenia etc. Transfusions when necessary

6 Epinephrine to relieve urticarial or angioneurotic attacks (see Chap XIII)

In All Drug Eruptions, *Look for* and *Treat the Accompanying Systemic or Local Visceral Reactions* and All *Associated Medical Conditions* Renal Damage, Hepatic Damage, Vascular Damage, Changes in the Blood and Blood Forming Organs, and Acute and Chronic, Local or Generalized, Inflammatory Processes in Any Organ or System, May or May Not Be Associated with the Cutaneous Changes.

Local Treatment.—*The cutaneous changes of drug eruptions should always be treated locally and in the same manner as those of the disease they resemble or reproduce*

Thus, the local treatment of acneform eruptions is essentially that described under Hospital Treatment of acne (Chap. IX) The generalized, oozing and crusting drug dermatoses are treated as generalized eczema or dermatitis (Chap. VI) Itching due to drugs is treated symptomatically like any other itch, *i e.*, with antipruritic lotions, tinctures, baths (see p. 136) x ray etc. (℞ 3 plus ℞ 4 ℞ 21 to ℞ 26 inclusive ℞ 41) Furunculoid eruptions are treated like furuncles and carbuncles (Chap. VIII) Urticarial dermatoses and angioneurotic edemas from drugs are treated like those from other causes (epinephrine, etc., Chap XIII)

These local and symptomatic measures must *never be neglected or delayed* but should be instituted and continued while the causal drug is being sought and/or eliminated, and while the above described specific and nonspecific general measures are adopted.

Thus, *the diagnosis and management of drug eruptions and their possible accompanying general and visceral*

manifestations or sequelae may be said to include the entire armamentarium of both general medicine and dermatology

Exfoliative and crusting arsenical dermatitis is relatively common and carries such serious possibilities that its management requires special consideration

Exfoliative and Crusting Arsenical Dermatitis—In contrast to the sudden urticarial morbilliform, or scarlatiniform drug eruptions (the last two often appear on the ninth day after the first injection) the itching reddened oozing severe, spreading and in the later stages, scaly and exfoliating arsenical dermatoses represent a grave disease, with considerable danger to life.

The patient should be put to bed and regarded and treated as severely ill with the indicated forms of general medication (tonic, palliative and specific) including transfusions if necessary etc., antipyretics etc., sedatives, etc. (always be aware of the possibility of an exacerbation due to any drug administered) Nursing and external care of the skin are the most important part of the management, which may include

1 Soothing baths ($KMnO_4$ starch) powder (℞ 5) or shake lotions and emulsions, etc., with or without antipruritics and antiparasitics (℞ 3 plus ℞ 4 ℞ 21 ℞ 22 ℞ 23 ℞ 24 ℞ 25 ℞ 26 ℞ 41)
2. Soothing oils and greases (℞ 18, ℞ 60 ℞ 67)
3 Prevention and treatment of *pyodermas* with antiseptic dressings, sulfonamide emulsion bases (℞ 76)
Pyodermas represent one of the most serious complications of exfoliative dermatitis they can appear at any stage, but often come late when the patient is apparently on the road to recovery

4. "Detoxification" with sodium thiosulfate injections, glucose, etc. Injections of crude liver extract. Bland but high-vitamin diet. Large doses of vitamin C vitamin B complex.
5. *No more arsenicals* in cases accompanied by hemorrhagic manifestations, or by blood dyscrasias or by jaundice, hepatitis, or acute yellow liver atrophy No arsenicals *in any case* unless the indication is absolute, and then only by beginning with fractional doses (*e g*., 1/100 of the smallest normal dose) and only after the eruption has entirely disappeared.

In early syphilis, attempts at resumption of arsenical treatment may be almost imperative, both from the individual and the public health point of view When arsenicals must be resumed (only after consultation with expert dermatosyphilologist)

1 Upon recovery from eruption, look for and, as far as possible, remove all foci of infection and correct all medical and surgical conditions which might cause ill health.
2. After the inflammatory dermatosis is gone and the patient's health restored, begin with 1/100 or even 1/000 of the usual initial dose of a *different* arsenical (*mapharsen is the least likely to produce dangerous skin reactions*) Wait and see what happens before increasing dosage.

In late, noncontagious syphilis, try to avoid arsenicals in cases which have once had a *severe* arsenical reaction depend on bismuth, iodides, hyperpyrexia, etc. Never resume arsenicals in cases which have had severe hemor

rhagic reactions or hepatic reactions or impairment of the blood forming organs It is noteworthy that some arsenical eruptions can recur even when drugs other than arsenic (e g., bismuth iodides, salicylates barbiturates) are administered or upon other forms of exposure (foods, intercurrent infections, etc.) (nonspecific flare-ups," or anamnestic reactions or polyvalent sensitivity)

Remember that the More Dangerous Arsenical Eruptions Are the Purpuric and the Severely Itching Eczematoid Crusting Ones, with Insidious Onset and Usually Not the Urticarial or the "Measly" Ones Which Appear Nine Days after Injection. Even These Latter Also Demand that Arsenicals Be "Switched" and Renewed Only if Necessary and with Caution. However Some of These Less Dangerous Eruptions Will Sometimes Disappear Spontaneously Even during Continued Arsphenamine Therapy (Compare Eruptions of This Type Due to Sulfonamides, Hydantoin Derivatives Etc) Examine All Patients with Arsenical Reactions for Kidney and Liver Damage, Blood Dyscrasias, and for Other Possible Accompanying Internal Diseases.

Arsenical eruptions are occasionally followed by sequelae. These include hyper and depigmentations which may be of small or large extent and often appear first on the arms. The depigmentations may simulate vitiligo and may be permanent. Other common late results are hyperkeratoses of the palms and soles, including arsenical "warts," premalignant or malignant lesions, and epitheliomas in these and/or other areas.

1. Remember that Almost Any Morbid Picture May Be Due on Occasion, to a Drug and May Be More Readily Curable by Withholding Medication for a While than by Any Form of Administration.
2. Even Fever (with or without Rash) May Be Due to a Sulfonamide, an Arsenical, or Some Other Drug. Sometimes, Strangely Enough, the Cause of Fever May Lie in a Hypersensitivity to an Antipyretic!
3. The Most Severe and Even Fatal Reactions Are Sometimes Elicited in Extremely Hypersensitive Persons on Exposure to an Amount So Small as to Be without Pharmacologic or Toxicologic Effect and to Defy Detection by Chemical Methods.
4. Once a Patient Has Had a Reaction from a Drug He Is a Candidate for a Similar Attack upon Renewed Exposure to Even One Infinitesimal Dose of the Same Drug or of a Similar Drug or Sometimes Even of an Unrelated Drug But Not All Who Once React to a Drug Will Necessarily React Again at Each Reexposure.
5. Drug Reactions May Appear Almost Immediately after Exposure, but Usually Occur Several Minutes to Hours, up to Five or Fifteen Days, after Exposure. Moreover a Drug May Be Well Tolerated for Years, and Then at Last Cause Trouble.
6. Drug Eruptions Often Improve Rapidly after Exclusion of the Causal Drug But Some Continue and Even Grow Worse for Weeks, Months, and Even Years after the Last Apparent Exposure.

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> Remember that the More Dangerous Arsenical Eruptions Are the Purpuric and the Severely Itching Eczematoid, Crusting Ones, with Insidious Onset and Usually Not the Urticarial or the "Measly" Ones Which Appear Nine Days after Injection Even These Latter Also Demand that Arsenicals Be 'Switched" and Renewed Only if Necessary and with Caution However Some of These Less Dangerous Eruptions Will Sometimes Disappear Spontaneously Even during Continued Arsphenamine Therapy (Compare Eruptions of This Type Due to Sulfonamides, Hydantoin Derivatives Etc) Examine All Patients with Arsenical Reactions for Kidney and Liver Damage, Blood Dyscrasias and for Other Possible Accompanying Internal Diseases.

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CHAPTER XV

PARASITIC INFESTATIONS

(Scabies; Pubic, Body and Head Lice; Insect Bites; Ticks, Etc.)

Scabies

General Diagnosis, Epidemiology and Complications.—Consider a diagnosis of scabies in every man who has an itching eruption, especially if the hands and genitalia are involved.

Keep the characteristic distribution in mind (Fig 12) Webs of fingers, flexor surface of wrists, axillae, (especially along the axillary folds) lower part of the abdomen and back (especially at level of belt line) penis and scrotum. Ordinary scabies does not occur above the neck.

The disease is highly transmissible, and has been an *important source of loss of man-days in all past wars.* The necessity of recognizing and treating infestations early cannot be overemphasized

Examine the men who have been in daily contact with the infested patient.

The elementary lesions is a small, tortuous burrow with a tiny vesicle at one end. The acarus may be recovered from this lesion by an experienced examiner but this requires practice. Excoriation, crusting, and *secondary infection* tend to obscure the primary lesions, which are rarely found in "textbook" perfection. On the penis and scrotum, the lesions commonly are infiltrated papules. (Suspect the possibility of coincident syphilis.)

The diagnosis is sometimes difficult in men of good hygiene—the lesions may consist *only* of scattered ex-

be paid to all the blistered or papular areas, especially between the fingers, on the wrists, on the axillary folds, around the waist, on the buttocks and genitalia. *All the affected areas should be scrubbed open.*

4. After the bath, sulfur ointment, 10 to 15 per cent, (or other prescribed medicaments ℞ 13, 73 74, 75) is rubbed in vigorously with special attention to the regions outlined above. A thick coating of ointment is left on and the patient put to bed wearing clean pyjamas.
5. When sulfur ointment is used, the treatment is *repeated vigorously each morning and evening for three consecutive days without bathing or change of bed linen during that time.* On the third evening the patient takes a hot bath, again with thorough scrubbing with tincture of green soap. The skin is dried with clean towels, and painted thoroughly with a shake lotion (℞ 3 plus ℞ 4) and the patient put into clean pyjamas and a clean bed.
6. This vigorous treatment sometimes results in a sulfur dermatitis, particularly in blond, dry skins. Repeated application of the lotion will ordinarily control this promptly
7. Secondary pyoderma, unless severe, will ordinarily clear up with the aforementioned regimen. However in severe cases it may be necessary to treat the pyoderma (see p. 224) for twenty four hours before the sulfur ointment is used. Sulfadiazine or sulfathiazole cream may be used on severely infected areas during the sulfur therapy
8. An alternate method, cleaner more rapid and effective, but more costly and less generally available,

coriated or urticarial papules. In such cases a "th peutic test" for scabies may be justified. In men of hygiene the infestation may be extraordinarily v spread, though the head remains uninvolved

Itching is almost always a prominent symptom ordinarily increased after the patient has been in be a short time However itching at night is not an abs indication of scabies *many other eruptions itch mo this time*

Pyogenic infection (including boils) is a *freq complication* of scabies, especially under field condit It tends to be more severe in men with oily sebor skins Think of scabies when impetigo itches

In most cases scabies is acquired from an infeste dividual by direct contact, such as shaking hands, sl ing together or sexual intercourse. The disease may be acquired by contact with infested clothing or bed li though this is a less common source.

Simplified and Hospital Treatment

1 *Wherever possible it is advisable to refer* a pat with scabies to a hospital or sick bay for tr ment. Treatment will be more thoroughly car out, direct contact with others will be lesse and the eventual loss of man-days will be less t with ambulatory treatment.
2 All clothing should be removed before the pati is allowed in the ward Washable clothing sho be *thoroughly laundered* and outer cloth cleaned preferably with steaming
3 The skin is *thoroughly scrubbed* in a hot show using liquid soap (tincture of green soap) an medium soft brush. Particular attention is

by rinsing with half strength vinegar on two suc cessive days. They are then removed with fine-toothed comb. Or

2. Acetic tincture of larkspur ℞ 40
3. If more readily available, ammoniated mercury oint ment is effective. Apply twice daily for four days. The old blue ointment should *not* be used It is irritating and leads to disability
4. Cuprex, ℞ 82, will remove both lice and nits. Two applications are sufficient. It causes considerable burning when applied.
5. Camphophenique (Navy issue) apply on thoroughly dry skin (one application usually sufficient)
6. In severe cases it is occasionally necessary to shave the hair This is often followed by considerable itching as the hairs regrow but is advisable if large *groups of men are affected*.

Pediculosis Corporis

General Description and Diagnosis.—The body louse lives and lays its eggs about the seams of clothing It feeds upon the surface of the body commonly in the inter scapular shoulder and waist regions. Its recognition and control are important because it transmits epidemic *typhus fever trench fever* and *recurrent febrile spirochetosis*

Itching is a constant feature, especially over the shoulders, chest, abdomen, and back. The hands are unaffected, in contrast to scabies.

The skin lesions consist of red puncta from bites, urtic arial papules, *pyoderma*, and particularly characteristic *linear* scratch marks on shoulder and back.

In contrast to pediculosis pubis, scratching here is deep and leads to bleeding Protracted severe cases can

It is expected that certain new and more effective lice repellants, not yet officially authorized, will shortly be available.

is that with benzyl benzoate (℞ 74 75) F
cations of the ointment or liquid at in
twelve hours are ordinarily sufficient. Th
and precautions as to clothing and bed cl
exactly the same as the routine with su
ment.

Pediculosis Pubis (Crabs)

General Description and Diagnosis.—This broader and plumper than the body or head l has strongly developed claws which give it a appearance. It usually lives in the pubic region, be found in the hair on other parts of the bo the anus in the axillae, on the trunk, arms, an hairy men and occasionally in the eyebrows.

The diagnosis depends on the finding of lice The louse often is difficult to see, and should l for at the base of hairs. The nits are firmly around the hairs.

A small erythematous papule, usually at the opening occurs following the bite of the louse. is ordinarily present, though variable. Even wit itching only a few parasites may be visible.

The pubic louse does not disseminate disease, as is known Most of the considerable discom disability from this disease results from the u ritating methods of treatment. Macular blue pl tion of the skin usually on the abdomen or trunk in some cases (tâches bleus)

Treatment.—

1 Application of 1 500 mercury bichloride

Treatment.—

1 Thorough shampoo.
2. Apply a mixture of equal parts of kerosene and olive oil, wrap the head with a towel turban, and allow to remain in place over night. Caution inflammable.
3. Shampoo again in morning apply vinegar to soften the nits, and remove them with a fine-toothed comb.
4. Other methods of treatment are (1) Cuprex (Merck) ℞ 81 (2) Tr larkspur ℞ 40 (3) 1:500 mercury bichloride solution.
5 If large numbers of men are infested, it is advisable to clip the scalp routinely
6. Treat secondary pyoderma as outlined on p. 224.
7 Recently Busvine and Buxton (Brit. M. J Apr 11 1942, p. 464) have criticized the older methods of treatment, and report great success with 25 per cent technical lauryl thiocyanate, or 50 per cent lethane 384 special, or 1 per cent rotenone. We have had no experience with these methods, but the results of these investigators seem most satisfactory

℞	Lauryl thiocyanate (duPont—technical grade, distilling above 236 C.)	25 per cent
	Paraffin oil (B.P 325 C.)	75 per cent
℞	Lethane 384 special (Rohm and Haas, Phila.)	50 per cent
	Refined paraffin	50 per cent
℞	Derris extract	1 per cent
	Emulsion base ℞ 58	99 per cent

develop generalized hyperpigmentation, including that of the mucous membranes. There may be accompanying wasting and weakness—a picture resembling Addison's disease in many respects.

The finding of eggs and parasites in the seams of clothing is confirmatory

The incidence of pediculosis corporis increases sharply in men who have little opportunity to bathe especially if quarters are crowded.

Treatment.—

1. Thorough soap and water bath scrub with brush for fifteen minutes.
2. After bath apply 10 per cent sulfur ointment over entire skin surface.
3. All clothing is autoclaved for fifteen minutes. This is the most important item of treatment.
4. Secondary pyogenic infection treated as outlined on p 224 Treat scratch dermatitis with soothing lotions (℞ 3 plus ℞ 4 or 25)
5. In large-scale infestations it is necessary to set up suitable delousing centers.

Pediculosis Capitis

The parasites and nits are easily seen on examination of the scalp The nits are attached to the hair shaft but may be slipped up and down along the hair The louse does not infest areas of the body other than the head. The eyebrows and beard are affected only in long standing cases.

Pediculosis capitis does not transmit any epidemic disease but frequently produces *severe secondary infection* often with *posterior cervical adenopathy* and occasionally fever

Bedbug Bites

The bedbug lives in the crevices of furniture and feeds on the human skin. The bites occur in groups of two or three, often in a linear arrangement, and are most commonly seen on the extremities and buttocks. There is an initial transitory wheal which is often succeeded by purpura. The lesions persist for several days. In rare cases, bullous and/or hemorrhagic lesions, and even systemic involvement with fever and prostration, can occur

Treatment.—

1. Antipruritic remedies as for mosquito and flea bites.
2. Mercury bichloride solution, 1 500 kills the eggs when poured into cracks and crevices of infested furniture. Fumigation with sulfur will kill the parasites. If available, expert fumigation with hydrocyanic gas is the most effective sanitation measure. The parasites are often very difficult to exterminate.

Chiggers (Trombidiosis) (Red Bug)

An *important* military dermatosis. The bites are productive of great annoyance in troops on maneuvers in warm climates, and sometimes result in partial disability from scratch infection.

Chiggers are the largest of all the mites they are red in color with orange or yellow backs. They do not burrow into skin but merely insert mouth-parts deeply into the integument. Removal of the mite from the skin after it is attached does not lessen the subsequent reaction. When engorged with blood, the mite falls off

Chiggers commonly attack the skin below any tight constriction, such as garters or a belt. The initial wheal

Small total quantities (8 cc.) are sufficient for each case. Busvine and Buxton recommend application from a spoon or pipet to four areas of the *scalp* on each side, and allowing the compound to remain for ten days before shampooing A single application is ordinarily sufficient.

Mosquito Bites

Many different species of mosquito inflict bites which cause wheals immediately or after variable periods of time. The sensitivity of different persons varies greatly In some persons, and particularly with some species of mosquito blisters or hemorrhagic reactions may result.

Treatment.—Soothing lotions (℞ 3 plus ℞ 4 or 25) Tr iodine, or triturate of equal parts of chloral hydrate and camphor

Certain new insect repellents, particularly for *flying insects* and for *lice* have been recommended for use in the armed forces on the basis of studies carried out in the U S Department of Agriculture Employment of these new improved repellents in the armed forces will depend on further study and the issuance of specific directives by the offices of the Surgeons-General

Fleas

Many species bite man causing pruritic pale or erythematous wheals in the center of which a reddish punctum is visible. The lesions are grouped and occur most commonly on the *extremities The reaction of different skins* to flea bites is extremely variable Some persons are immune while others develop large wheals or purpuric lesions.

Fleas carry disease in particular bubonic plague

Treatment.—Similar to that for mosquito bites. A dusting powder containing 5 per cent sulfur in talc may be used as a preventive.

woolen clothing Secondary contact dermatitis develops frequently

6. If the lesions are eczematized or infected after one week of field dispensary treatment, refer patient to hospital. The resultant limitation of activity and contacts, with facilities for more effective treatment, will result in an over-all reduction in man-days lost.

Other Insect Bites

Ticks.—May spread Rocky Mountain spotted fever tularemia, or relapsing fever Parasites of cattle, dogs, rabbits, and man. Seasonal prevalence May June, July Examine skin carefully for ticks, especially scalp neck, axillae, lower back. Remove with thumb forceps, gasoline, or ether or by touching caudal end of tick with hot burned-out matchhead. Instruct men *not to remove* ticks with bare fingers.

Creeping Eruption (Larva Migrans) —Caused by fly or worm larva *burrowing along superficial portion of* skin, producing a striking tortuous linear eruption. Acquired from lying in wet, sandy soil where dogs have defecated. Treatment consists of freezing larva in skin with ethyl chloride spray or solid carbon dioxide.

Ground Itch.—Vesicular dermatitis of lower extremities caused by larva of European hookworm and Necator Americanus, acquired by walking without shoes.

Grain Itch.—Mite bite from close contact with straw grain, and cotton. Suspect in troops billeted about farms.

Bot Fly —Painful inflammatory nodule produced by larva of bot fly

Black Fly Bites.—Local reaction at site of bite delayed for twelve to twenty four hours, persistent for days as

is followed by an intensely pruritic papule and often by *secondary infection. The infection and eczematous dermatitis following the chigger bites is often extremely persistent.* The response of the infection to treatment is less satisfactory than with other forms of pyoderma Occasionally a chain of generalized skin sensitization, with eczematous id lesions, is initiated and this may require weeks or months for healing

Vigorous measures for the prevention of chigger bites should be taken among troops in regions where there is thick, tall grass, especially during the late summer months.

Treatment.—

1 Prophylactic 5 per cent sulfur in talc as a dusting powder Or 5 per cent sulfur in a vanishing base *℞ 55 or ℞ 59 Apply before exposure* Warn men regarding possible sulfur dermatitis, especially in dry blond skins
2 Rotenone, 2 per cent solution applied two or three times daily for treatment. (Such a preparation is available from the Abbott Laboratories) It has the disadvantage of causing contact dermatitis when applied to the genitalia
3 Antipruritic lotions ℞ 4 25 26 41 or triturate of equal parts of chloral hydrate and camphor or as recommended by R. L. Sutton, Jr

Benzocaine	2 0
Flexible collodion	15 0

Bottle with rod in stopper

4 Watch for secondary pyogenic infection Once established it is difficult to cure ℞ 9 (See p 241)
5 Protect sites of lesions from contact with rough

woolen clothing. Secondary contact dermatitis develops frequently

6. If the lesions are eczematized or infected after one week of field dispensary treatment, refer patient to hospital. The resultant limitation of activity and contacts, with facilities for more effective treatment, will result in an over-all reduction in man-days lost.

Other Insect Bites

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Bot Fly.—Painful inflammatory nodule produced by larva of bot fly

Black Fly Bites.—Local reaction at site of bite delayed for twelve to twenty four hours, persistent for days as

itching nodules, often with regional lymphadenopath and regional pain and stiffness.

Always Think of Insect Bites as an Etiologic Possibility in Urticarial or Pruritic Papular Skin Lesions. The Hallmarks of Diagnosis Are (1) the Central Punctum in the Initial Wheal (2) The Haphazard Asymmetric, and Grouped Distribution (3) The Variable Degrees of Reaction Inflammation Local Purpura, Infection, and Eczematization Insect Bites Are a Much More Important Source of Disability in Military than in Civil Medicine. The Resultant Eczema or Infection May Be Extremely Persistent.

CHAPTER XVI

BENIGN AND MALIGNANT TUMORS

(Warts, Molluscs, Nevi, Cancers and Precancerosses, Scars, Etc.)

Warts (Verrucae)

Warts constitute an extremely common dermatosis. They are often incidental and unimportant and may require no treatment. However some types produce varying degrees of disability and it is with these that the following paragraphs are particularly concerned.

The *common type*, usually occurring about the hands in small or large numbers, is so familiar as to require no description. In men doing hard manual work, painful callosities or fissures may develop about the wart. Occasionally patients develop large numbers of lesions, patches of twenty-five or thirty on a single finger or widespread involvement of the paronychial margins. Warts may be spread to the face or other parts.

Digitate warts are grouped, elongated, cornified projections seen principally on the scalp, bearded region, and mucous membranes. *Filiform* warts are single, threadlike projections.

Venereal warts are found principally about the glans penis and perianal region in men of poor hygiene. They are pink or brownish cauliflower growths of varying size, often with dirty macerated surfaces. *Rule out syphilis.*

Flat warts are not so common in adults as in children. The lesions are flat-topped, polygonal, pink or brown,

principally on face or backs of hands Linear arrangement along scratch marks, common to all warts, is particularly evident in this type.

Plantar warts are ordinary warts, the appearance of which is greatly modified by the effects of pressure and protective callus formation. Surrounded by zones of cornification, in which the warts are seen as slightly cleared spots in which brownish red specks are visible. They are usually multiple and may sometimes involve a relatively large area, such as the heel in a mosaic arrangement. Plantar warts (Fig 25) may be incapacitating and sometimes prove incurable. Avoid overtreatment.

Etiology and Variations in Course—Warts are due to virus infection An apparent thorough removal of a wart is no assurance that some of the virus is not still present, and explains discouraging recurrences. Warts may sometimes undergo sudden rapid spread for reasons not well understood

Warts tend to persist in regions subject to trauma such as (1) the bearded region and fingers (2) the feet, especially if there are orthopedic defects or excessive perspiration (3) the moist, unclean anogenital region They often disappear without treatment.

Simplified Treatment

Warts in men on field or sea duty need not be treated with the following exceptions

1 Painful plantar warts
   (a) Shave off thick skin of top with scalpel or razor
   (b) Cut piece of salicylic acid plaster (F 48) to size of wart and surrounding callus, apply ordinary adhesive to keep in place for three to seven days. If dressing becomes wet, remove it On

removal, curet and clip *softened* skin, and apply fresh salicylic acid dressing (Salicylic acid plaster is not a standard item of the "Simplified Formulary" but can be obtained from larger medical centers. Substitutes are ℞ 19 applied under adhesive plaster or plaster alone allowed to remain *for* several *days*.)

(*c*) If feasible, apply pad or ring to lessen pressure on wart.

(*d*) Psychotherapy bismuth injections, etc., may be used.

2. Venereal warts.
   (*a*) Cleanse frequently with soap and water
   (*b*) Dust several times daily with talc containing 10 per cent boric acid and 0.1 per cent mercury bichloride or
   (*c*) Apply weak sulfur resorcin lotion (℞ 8) twice daily or
   (*d*) Apply 10 per cent silver nitrate once daily
3. Warts in bearded region, showing rapid spread.
   (*a*) Apply strong sulfur resorcin lotion ℞ 8 twice daily
   (*b*) Remove with sharp curet.
4. Filiform warts interfering with shaving may be snipped off and the base touched with 10 per cent silver nitrate solution.
5. Flat warts are best treated by the application of a strong lotion or paste to induce peeling (℞ 8, 67) or by use of a sharp curet.

Hospital or Sick Bay Extended Treatment

The methods of treatment of warts are numerous, none completely satisfactory Much of the success of a

particular method depends on the skill and experience of the medical officer with the given procedure. In addition to simplified treatment

ELECTRODESICCATION —A satisfactory method of removal of common digitate, and venereal warts, provided destruction *is not too deep* and the operator has had some *training* with the machine. For larger warts it is always best to anesthetize the base with procaine Using a medium spark, the body of the wart is charred it will then ordinarily separate off easily with a skin curet, or the desiccated core may be separated with small curved surgical scissors (see Fig 109) following which the base is desiccated lightly In small filiform or flat warts, light desiccation without anesthesia may be used. The method is applicable to plantar warts (especially isolated single lesions) in the hands of an experienced operator the patient should however remain in bed for several days after removal if delayed healing and tenderness are to be avoided

SURGICAL REMOVAL.—Medical officers more familiar with surgery than with electrodesiccation will find the former more satisfactory Under local anesthesia an incision is made with a sharp scalpel along the line of demarcation between wart tissue and normal skin. With a skin curet or rat-toothed forceps the wart is separated from its bed and the base and edges thoroughly scraped with the scalpel Bleeding is easily controlled by pressure. Silver nitrate stick should then be applied to the base. The dressing should be changed daily and undue trauma to the site avoided

VARIOUS CAUSTICS.—Tedious and not too successful. Trichloracetic acid and monochloracetic acid are among the best for general use on warts. A small amount should

be applied, preferably with a sharpened wooden applicator bored into the wart. Avoid application to normal skin scarring will result. In a week or ten days the upper portion of the wart can be peeled away and the acid is reapplied.

OTHER METHODS.—Additional caustics, electrolysis, freezing, injection of sclerosing agents, etc. Selection will depend on the preference and experience of the officer

X-RAY THERAPY.—The initial treatment of choice for plantar warts. Should be given *only* by *specially qualified medical officer* Ordinarily 3000 r in a single or divided dose is administered, sharply screened to the lesion Should not be used in mosaic plantar warts for these a combination of salicylic acid plaster and silver nitrate is preferable.

PSYCHOTHERAPY.—Various forms of *suggestion therapy* are sometimes successful in all forms of warts. They work best in curing the flat variety

Molluscum Contagiosum (Fig 67)

An uncommon, but highly characteristic virus infection. Small waxy or pink contagious *umbilicated* tumors. Subject to a secondary infection when occurring in body folds. Cured by superficial incision, expression of contents, and touching base lightly with tincture of iodine or trichloracetic acid or the electrodesiccating needle. Recently reported to respond to sulfonamides by mouth, but this treatment is probably unjustified except in widespread involvement.

Nevi

The chief consideration of military importance in regard to *nevi is* whether or not a particular lesion is liable

to undergo malignant alteration (melanoma) The treatment of hemangiomas and pigmented nevi for purely cosmetic reasons is not often justified in military practice. There is considerable confusion among experts as to the gross and histologic criteria which indicate that a pigmented nevus is likely to undergo malignant changes. It is probable that no criteria are absolute as indicators of malignancy or future malignancy The following are practical indications and directions

1 Elevated soft, or fibrotic moles of light color especially if they *contain coarse hairs* are *not* likely to become epitheliomatous
2. Bluish black pigmented nevi are those most likely to become melanomas particularly if situated on lower extremities.
3 In general moles should be let alone, unless they are at sites subject to constant irritation such as the bearded region shoulders, belt line, groin and feet.
4 The decision as to removal of a mole should not be made in field dispensaries and small sick bays, unless absolutely necessary If removal is indicated it should be done only after expert consultation
5 No half way measures are permissible *wide excision with an adequate border is the only treatment for moles suspected of being melanomas*
6 Always submit the specimen for histologic examination.
7 X ray and radium therapy is contraindicated for all moles.

The Premalignant and Malignant Lesions of the Skin and Mouth

This section is intended as a practical guide in the diagnosis and selection of treatment. The details of histologic differentiation and of surgical, x-ray and radium therapy are too complex for discussion within the limits of this book. The medical officer should maintain a *high index of suspicion* as regards the possibility of skin malignancy. The treatment of *premalignancy* is ordinarily fairly simple and satisfactory and it is possible to recognize almost all dangerous skin lesions in this phase.

Premalignant Lesions.—

The chief premalignant lesions are

Senile Keratoses.—These may be seen in early adult life, especially in blond skins which have been considerably exposed to wind and sun. Face, ears, backs of hands. Dry papule with a grayish or brownish scaling or horny top; *pink or red base; lesions are dry, not greasy.* *If there* is any ulceration, or if the base bleeds readily when the scale or horny cap is lifted off it is probable that the lesion has already become epitheliomatous. Distinguish from *seborrheic keratosis* which hardly ever becomes malignant. This is brown to blackish-brown, ordinarily rather greasy and distributed to face, scalp (particularly at the hairline), shoulders, and sometimes chest and back. Look for small follicular dimples on the surface.

Keratosis of the Lip or Mucocutaneous Junction.—Especially dangerous.

Premelanomatous Nevi.—See preceding section.

Large old scars, especially those of burns, tuberculosis, blastomycosis, fissures.

Atrophy and Scarring from Previous X rays. Regard

patches of scaling and redness, or small superficial ulcers in such scars with suspicion.

Leukoplakia.—Of lip cheek, or tongue.

Gumma of the Mouth.—Especially of the tongue, may undergo rapid malignant breakdown

Papillomas or Chronic Fissures—Of tongue nose lips.

Suspect Any Dry Keratotic Ulcerated, or Fissured Lesion Which "Won t Heal" or Any Dark Brown or Blue-Black Papule Which Is at a Site of Irritation or Is Extending Avoid Prolonged Local Treatment of Ulcers without Adequate Explanation of Cause.

Malignant Lesions.—

The chief malignant lesions of the skin are

Basal Cell Epithelioma—The diagnosis and differentiation from prickle-cell epithelioma *cannot be made with finality in the absence of histologic study* but the following are general clinical characteristics which will be found helpful

Basal cell epitheliomas are more likely to have

1 A pearly rolled border in which definite telangiectasia is visible
2. Tendency to bleed on slight trauma In older lesions, central ulceration and a bloody crust are present.
3. Ordinarily a slow course, gradual extension over a period of months or years. Does not metastasize Over 75 per cent on face and head
4 Variations in type are
   (a) Nodular (rodent ulcer) The most common and characteristic.

(b) Papillary or vegetative type—tendency to more hypertrophic type of growth
(c) Superficial type. Often multiple, may resemble psoriasis, lupus erythematosus, or eczema (biopsy necessary for differentiation)
(d) Scarring or morpheiform type. Very slowly ex tending thin rolled border with healing and scarring of center Sometimes disappears spontaneously

Squamous (*or prickle*) *cell epithelioma* has a tendency to develop on mucous membranes, in scars, x ray atrophy senile keratoses, fissures, chronic ulcer leukoplakia. It is much more commonly preceded by a premalignant lesion than is basal cell epithelioma. There is an initial small red hard nodule or papilloma, which may spread rapidly or slowly with eventual ulceration. On lips or buccal surface there may be only a patch of scaling on a slightly indurated base, or a benign-appearing papilloma. This type of epithelioma may metastasize early Its treatment is much less effective than that of basal cell epithelioma.

Melanocarcinoma.—See p. 346.

Treatment of Premalignant and Malignant Skin Lesions.—There is no *simple treatment* Consultation and treatment in a hospital or large sick bay should be obtained. If this is not possible, the best procedure is to excise the lesion surgically with a border of at least 0.5 cm. (more widely in moles) and submit the tissue for histologic examination. Local anesthesia should be adequate, 2 per cent procaine with epinephrine being infiltrated *around* (*not* into or through) the lesion. Take the whole tumor if possible, widely and deeply In a large lesion selected for biopsy select an active infiltrated por

ion usually at the edge See below for directions regard ng biopsies.

The various methods of treatment of premalignancy nd malignancy of the skin cannot be given in detail here n general, the following rules are to be followed

1 Histologic examination of all lesions.
2 Thorough destructive removal accomplished variously by
   (a) Surgical excision.
   (b) Thorough electrocoagulation
   (c) X ray or radium therapy
3 Treatment of frank malignancy exclusively in hospitals or large sick bays with
4 Adequate surgical, dermatologic, and radiologic consulting and physical facilities.

Biopsy Technic

1 Select a young typical lesion for instance *not* a secondarily infected necrotic area in a skin granuloma but rather a small satellite nodule
2. Anesthetize by injecting 2 to 4 per cent procaine *around* not into, the lesion
3 Take an adequate piece of tissue, at least 1 by 0.5 cm. Cut to the subcutaneous fat or fascia If possible, excise small lesions in toto A dermal punch (Fig 109) may be used for lesions on the face or when multiple biopsies are desired. Biopsies taken with a curet may be unsatisfactory if the sweep of the instrument is not carried firmly and deeply
4 Avoid crushing tissue with forceps be gentle Suture carefully to prevent undue scarring In highly vascular or friable lesions cutting surgical

diathermy is sometimes useful, but the tissue must be taken widely and rapidly to avoid excessive cooking of tissue.

5. Always consider the indication for biopsy carefully Is it likely to result in information of general medical import? Will it disfigure? Will the site heal (scars, x-ray atrophy etc.)?
6. Lay the biopsy specimen, skin side up on a small piece of stiff white paper Allow to dry for a moment, then drop paper and specimen into fixative.
7. 4 to 10 per cent formalin is the most commonly used fixative others may be employed on the preference of individual laboratory directors. The specimen should not remain in the fixative over twenty four hours send to laboratory promptly
8. In military medicine the chief value of biopsies will be in the diagnosis of melanomas and epitheliomas. Other conditions in which it is of value include tuberculosis and other granulomas, sarcoidosis, xanthoma, molluscum and verrucae, leukemia cutis and lymphoblastoma, lupus erythematosus, granuloma annulare, lichen planus, and innumerable others (expert interpretation essential)

TABLE 15.—CLASSIFICATION OF SKIN TUMORS ACCORDING TO INDICATIONS FOR RADICAL OR CONSERVATIVE TREATMENT*

1. *Usually Requiring Immediat Surgical and/or Radiologic I tervention*
   - (a) Senile keratoses, with beginning infiltration and ulceration, rapid growth, inflammatory reaction.
   - (b) Frank basal or prickle cell epithelioma.
   - ( ) Leukoplakia of ulcerating, papillomatous or infiltrating type.
   - (d) X ray and radium ulcers, with infiltrated advancing edges.

* Based on table from Dermatologic Therapy in General Practice, 2nd ed. Year Book Publishers.

(e) Arsenical tar and oil keratoses, ulcers and nodules
(f) Melanoma actual or suspected.

2. *Usually Requiring Removal with Electrocoagulation or Surgical Excision (with Biopsy)*
(a) Small senile keratoses.
(b) Small early basal cell epithelioma.
(c) Slightly elevated, noninfiltrated leukoplakia.
(d) Seborrheic or senile keratoses not showing inflammation or growth. Superficial desiccation the best method. Biopsy not necessary

3. *Usually Requiring Only Prophylactic Measures and Regular Observation*
(a) Moles and pigmented nevi (unless at sites of irritation)
(b) Small nonelevated or noninfiltrated leukoplakia. Dental hygiene remove jagged teeth, adjust ill fitting dentures, stop smoking look for syphilis.
(c) Scars from burns destructive granulomas (except when showing persistent ulcers inflammation, or infiltration)
(d) X ray radium, tar arsenic sequelae provided they are flat, not keratotic inflamed or infiltrated.

CHAPTER XVII

PENILE LESIONS

THE following diseases are to be considered first in every man who has an ulcerative lesion on the penis

1. Primary syphilis (chancre) Secondary syphilis.
2. Chancroid.
3. Lymphogranuloma venereum.
4. Granuloma inguinale.
5. Herpes progenitalis.
6. Abrasion due to trauma followed by pyogenic infection (scabies!)
7. Sebaceous cysts, secondarily infected (usually on shaft of penis)

It is not within the scope of this manual to discuss the diagnosis and management of venereal diseases in detail (see Circular Letter 74 and other directives that may be issued) Therefore, only the fundamental principles are outlined.

Preliminary Management

The medical officer who first sees the man on sick call or physical inspection may be guided by the following

1. The diagnosis of ulcerative penile lesions depends almost entirely on *laboratory procedures Do not attempt* to make more than a tentative diagnosis *on the basis of history and clinical examination.*
2. All men with ulcerative penile lesions *should, when-*

ever possible be sent to the hospital immediately On ships, facilities for the necessary studies and for isolation are available in the sick bay If they are not, the patient will be transferred to a hospital hospital ship, mobile unit, etc.

3 *Do not use local treatment of any kind*
4 Be on the alert for extragenital primary syphilis, especially in the perianal region mouth, lips, and hands.

Management in Hospital or Sick Bay

The medical officer who is responsible for the management of the patient in the hospital or sick bay is to be guided by the following

1 The patient is placed in isolation
2. A complete physical examination (observing full precautions to prevent infection of others) is done as soon as possible after admission
3 The laboratory examinations are to be carried out as soon as possible after admission

Laboratory Examination.—*Darkfield Examination Technic.*—Remove crust and gently cleanse with sponge soaked with normal saline solution. Induce flow of serous exudate from deep in lesion by gentle squeezing or constriction of penis with a rubber band or by suction with syringe device (see Fig 108) Make every effort to obtain bloodless serum Collect serum on glass slide with a capillary pipet or by touching center of slide to the lesion. Apply coverslip and place under microscope equipped with darkfield apparatus. Carefully examine the entire preparation at least ten to fifteen minutes are necessary for a thorough examination

Soaking penis in normal saline solution for twenty minutes three to four times daily is done routinely if the first examination is negative. Repeat the examination daily until syphilis has been excluded (at least three examinations) Oftentimes *Spirochaeta pallida* are not found until repeated darkfield examinations have been made.

The finding of *Spirochaeta pallida* by an individual who has had *special experience* in darkfield examinations suffices for diagnosis of syphilis—primary secondary or infectious relapse. In the mouth, it is impossible to distinguish *Spirochaeta pallida* from other nonpathogenic spirochetes and extreme care must be observed in the interpretation of material from moist, dirty macerated lesions at any site.

The darkfield examination is the one crucial examination in the diagnosis of infectious syphilis The importance of routine darkfield examinations on all ulcerative and moist penile lesions as well as on similar lesions on other parts of the body when there is any reason to suspect early syphilis, cannot be overemphasized.

Serologic Tests for Syphilis.—In primary syphilis, all serologic tests for syphilis are often negative. Therefore, *do not attempt to rule out primary syphilis on the basis of serologic tests*. However regardless of the darkfield findings, treatment for syphilis is instituted if repeated serologic tests for syphilis are positive. In the case of a man who has an ulcerative or moist papular lesion on genitalia or any other part of the body which is negative for *Spirochaeta pallida* on repeated examinations, the finding of repeated positive serologic tests does not *necessarily* mean that he has *early syphilis*. It is possible that he has latent syphilis, etc., and another disease (for

example, chancroid lymphogranuloma venereum, scabies, etc.)

All positive serologic tests are *confirmed by a second positive* test before antisyphilitic treatment is instituted, unless, of course, the darkfield examination is positive for *Spirochaeta pallida* Expert knowledge is necessary for the interpretation of conflicting serologic reports.

SEROLOGIC FOLLOW UP EXAMINATIONS —Should be carried out in all men who have penile lesions. It is possible to acquire chancroid, lymphogranuloma venereum, granuloma inguinale, and syphilis with the same or subsequent sexual exposures. Therefore do a serologic follow up for syphilis even if a positive diagnosis of one of the other diseases has been made. The serologic tests for syphilis are repeated at weekly intervals for one month thereafter at two-week intervals until a total of at least four months has elapsed Do a complete genital cutaneous, and mucous membrane examination at the same time that the serologic test is repeated.

Serologic follow up examination should also be done on individuals who have lesions on other parts of the body especially the mouth, lips and perianal region

Serologic follow up should also be done on patients who have acquired gonorrhea

Intradermal Test for Chancroid —Intradermal injection of 0 1 per cent of Ducrey vaccine (Lederle) Properly prepared vaccines of killed Ducrey bacilli when injected intracutaneously elicit a positive skin reaction in the vast majority of patients who have been infected with chancroid (Ito-Reenstierna test) The inflammatory papular response is to be read forty-eight to seventy two hours after injection. This skin sensitivity is specific and usually appears within a few days to several weeks

after infection. However a few patients develop the skin sensitivity only later up to several months after infection. Nevertheless, *most* patients with active buboes due to chancroid give strongly positive reactions as soon as the buboes become clinically evident. The skin allergy apparently lasts throughout life, and therefore a positive Ducrey reaction means only that the patient has been infected with the bacilli at some time previously and does not *prove* the nature of the presenting lesions.

Frei Test for Lymphogranuloma Venereum.—Intradermal injection of 0.1 cc. of human or mouse brain or chick antigen (Squibb-Lygranum) into flexor surface of forearm with similar injection of the control solution. A positive test is manifested by an erythematous papule of about 7 mm. or more in diameter provided the control site is negative. If there are erythematous papules at both sites, subtract the diameter of the control from the Frei test site and consider the test positive if the difference is 7 mm. The cutaneous test is highly specific, the skin allergy developing as early as five to ten days after infection, but sometimes not for several weeks. A small percentage of patients do not develop sensitivity for several months, and a very small number never become sensitive. Once established, the specific sensitivity can last for the rest of the patient's life. Therefore, a positive skin reaction denotes only that a preceding infection with lymphogranuloma venereum has occurred, and not necessarily that the presenting penile lesion is due to the virus. Repetition of the test may be necessary if the initial one is negative.

The determination of the serum-albumin/serum-globulin ratio is also of value in the diagnosis of lymphogranu-

Or various modifications of it.

loma venereum. The globulin fraction increases, and the ratio therefore decreases

Frei tests are to be done routinely on all men who have inguinal lymphadenopathy unless the cause for the lymphadenopathy has been definitely established

Granuloma Inguinale—There is no laboratory test for granuloma inguinale except the finding of Donovan bodies on smear with special staining technic (experience is required) and a biopsy This lesion is relatively char acteristic in appearance very indolent, and it is not common It is a shiny granulating ulcer which slowly enlarges peripherally associated adenopathy is rare.

Herpes Progenitalis—Herpes progenitalis is vesicular and is not difficult to diagnose if the lesion is seen in this stage. However in most instances, the lesion is first seen after the vesicles have ruptured. They tend to be recurrent. Always make the diagnosis of herpes progenitalis by exclusion, ruling out venereal diseases by appropriate laboratory examinations. The same general principle applies to abrasions and small lacerations on the penis.

Sebaceous Cysts—Sebaceous cysts on the penis, especially on the shaft, often become secondarily infected, and may offer a diagnostic problem The laboratory ex aminations described previously are essential if there is any doubt in regard to the diagnosis

The history should elicit careful data on time of ex posure, place of exposure, identity of sexual partner data on pre- and post-exposure prophylaxis or *abortive treatment* and previous local or other treatment (either by the soldier another medical officer a civilian physician or a druggist, etc.)

Circular letter No 18 should be read in detail

SUMMARY

1. *Primary Syphilis.*—Usually an indurated ulcer with inguinal bubo, but do not make diagnosis on clinical appearance. Usually penile, but *may be extragenital.* Diagnosis depends on darkfield examinations and serologic tests for syphilis. Maintain a high index of suspicion.

2. *Lymphogranuloma Venereum.*—The inguinal lymphadenopathy is the important clinical finding There may or may not be a primary lesion. If it occurs, it is usually evanescent and variable in appearance. The diagnosis depends on clinical and historical evidence and on the Frei test.

3. *Granuloma Inguinale.*—The lesion progressively increases in size by peripheral extension, the surface is bright red, relatively clean, and bleeds easily The ulcer is indolent and does not heal unless appropriate treatment is instituted. Diagnosis depends on finding of Donovan bodies in smears, or biopsy and exclusion of other venereal diseases. The disease is most uncommon in white men.

4. *Chancroid.*—The lesions are often multiple there may or may not be inguinal bubo Diagnosis depends on clinical and historical evidence, exclusion of other diseases, and on intradermal Ducrey test. The chancroid organism can be cultured but the procedure is difficult and not practical in most hospitals.

5. *Herpes Progenitalis*—A grouped vesicular lesion which usually becomes ulcerative recurrent. Diagnosis made by clinical observation, history and exclusion of venereal lesions.

6. Other diseases which may affect the penis are enumerated in Chapter IV

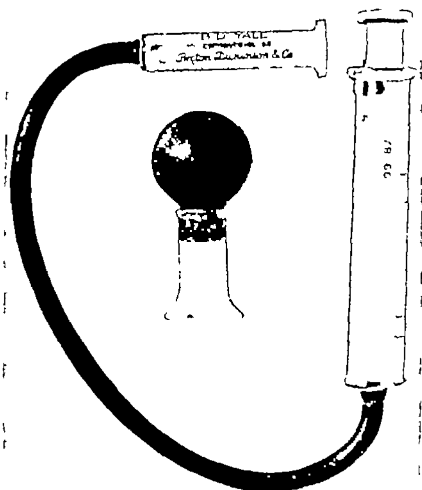


Fig 103.—Two suction devices for bringing serum to the surface of lesions for darkfield examination. The syringe and rubber tubing apparatus (Stokes-Chambers) is extremely satisfactory. The open end of the small 2 cc. syringe is placed over the lesion and suction exerted by withdrawing the barrel of the large 10 cc syringe.

CHAPTER XVIII

MISCELLANEOUS SUNBURN AND ITS PREVENTION EXCESSIVE SWEATING PRURITUS OF VARIOUS TYPES

Sunburn

The prevention of sunburn is much more effective, inexpensive, and less time-consuming than treatment after the burn has occurred—entirely aside from considerations of discomfort and disability It is therefore worth while to regard sunburn in military personnel as a preventable occupational dermatosis. With some planning and the use of simple measures which should not interfere significantly with military routine, disability from sunburn can be avoided almost completely

1 In the case of trainees coming directly from civilian life, or men who have had no exposure to sunlight for some time, schedules should be arranged, whenever possible, to permit gradual tanning of the skin. The average brunet skin can be sufficiently tanned within one week to tolerate almost any amount of sunlight. Most important is *avoidance of a prolonged initial exposure* thirty minutes as a maximum for previously unexposed skin in strong sunlight. If a severe burn is suffered the first day weeks may elapse before the man can tolerate unlimited sunlight.

2. For blond skins or under conditions of unusual exposure various remedies are available for appli

cation to skin which cannot be protected easily by clothing large hats etc. When a combination of bright sunlight and strong wind exists, it is probable that much sunburn is due to a rapid evaporation of protective moisture from the skin. Prevention of this evaporation by a simple grease or ointment, such as petrolatum or zinc oxide ointment, is often sufficient. Dusting of talc over the grease increases its protective effect. Of the various special protective lotions or ointments the following are recommended

(a) *Protective Tincture* Tannic acid phenyl salicylate (salol) tincture (℞ 33) This preparation is satisfactory unless the skin becomes wet it washes off quite readily Care should be taken not to spill it on white clothing it stains.

(b) *Protective Cream*

	Gm or Cc
Menthyl salicylate	14 0
Borax	1.8
Beeswax	20 0
White mineral oil	20 0
Water	28 7
Petrolatum	15 0

Heat water and dissolve borax Melt beeswax, petrolatum and mineral oil together Add *liquid to fats, constantly stirring* with temperature down to 45 C

	Gm
(c) Titanium oxide	20 0
Ointment base (℞ 6) to make	100.0

This ointment will persist on the skin for long periods, and is most useful in small areas which repeatedly burn and peel, such as over the cheekbones or bridge of nose. It resists removal with water (Titanium oxide is not available on official supply lists.)

3. A small number of patients with true physical allergy to light, or with light-sensitive dermatoses such as lupus erythematosus, will be encountered. These men are usually unfit for service involving exposure to sunlight.

Simplified Treatment

1. Swollen and blistered areas, when feasible wet compresses, ℞ 3, ℞ 11. In generalized cases, soothing baths when possible (p 136)
2. Soothing powders, lotions, pastes, and creams, ℞ 2, ℞ 3 (plus ℞ 4) ℞ 7 ℞ 9 or ℞ 10
3. Soothing and antiseptic creams, particularly in later stages, ℞ 6, ℞ 9 ℞ 10, ℞ 16, ℞ 18.

If the case is a severe one, refer to hospital when possible, and treat systemically for shock and prostration.

Look for Possible Combination of Severe Sunburn and Heat Prostration or Sunstroke.

Excessive Sweating (Hyperhidrosis)

Excessive sweating is a contributory or causal factor in a considerable number of skin diseases, including

1. Eczematous changes, fungous and pyogenic infections of the feet, hands, anogenital region, and axillae. On the feet, severe grades of hyperhidrosis

cation to skin which cannot be protected easily by clothing large hats, etc. When a combination of bright sunlight and strong wind exists, it is probable that much sunburn is due to a rapid evaporation of protective moisture from the skin. Prevention of this evaporation by a simple grease or ointment, such as petrolatum or zinc oxide ointment, is often sufficient. Dusting of talc over the grease increases its protective effect. Of the various special protective lotions or ointments the following are recommended

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	Gm. or Cc.
Menthyl salicylate	14 0
Borax	1 8
Beeswax	20 0
White mineral oil	20 0
Water	28 7
Petrolatum	15 0

Heat water and dissolve borax Melt beeswax, petrolatum and mineral oil together Add liquid to fats, constantly stirring with temperature down to 45 C

	Gm
(c) Titanium oxide	20 0
Ointment base (℞ 6) to make	100 0

tremities. Seborrheic skins much more susceptible. Often succeeded by superficial follicular impetigo Common in men in hot moist climates, engineroom and submarine crews.

Treatment.—

1. Mild sulfur resorcin lotion (℞ 8 and ℞ 29) twice daily or
2. Tannic acid tincture (℞ 41) or
3. Drying shake lotion (℞ 3 ℞ 23) or
4. Antipruritic powder (℞ 4 added to ℞ 2) or
5. Foot powder (℞ 1 a or b)
6. Treat secondary pyoderma as outlined on page 224 Avoid heavy grease ointments.
7. Ultraviolet-light exposures.

Pruritus (Itching)

The skin lesions commonly producing itching are listed on page ?0 Aside from the pruritus associated with a particular skin disease, itching may occur on skin which appears normal and there are certain types of "essential" pruritus and dermatoses classified under the term, *e.g* pruritus ani.

The physiology of itching is poorly understood, and the means of controlling it, particularly on skin which appears normal, are not entirely satisfactory It must be kept in mind that many of the external and internal medicaments used to control itching are in themselves sensitizers, and prolongation of the itching may be unwittingly produced by their use. These substances include *local anesthetics* tar resorcin, sulfur mercury barbiturates, bromides, and opium derivatives. The latter should never be used for itching alone.

produce maceration, swelling and scaling which are often misdiagnosed as fungous infection It also produces a disabling change of the soles called symmetrical erythema" characterized by red, macerated patches and tenderness.

2. Contributes to the development of contact dermatitis, particularly of the feet, by dissolving the contact irritant and maintaining it in intimate contact with the skin
3 Contributes to the persistence of extensive seborrheic dermatitis and intertriginous pyogenic infection.
4 Ill-smelling sweat (bromhidrosis) caused by odor producing micro-organisms and chemical changes of the sweat.
5 *Pompholyx* of hands—sagolike vesicles particularly along the sides of the fingers Probably often a type of "id eruption

Treatment of Hyperhidrosis of Hands and Feet.—

1 Issue" foot powder or ℞ 1 *a* or *b* several times daily May be used on areas other than feet.
2 Tannic acid tincture (℞ 41) or
3 Thymol salicylic acid lotion (℞ 47) for feet and/or hands, once or twice daily
4 Aluminum chloride lotion (℞ 35) To reduce perspiration (Caution occasional local reaction do not use over large areas.)
5 Frequent bathing if possible, with *careful rinsing off of soap*

Miliaria (Sudamina)

Small white or red vesicles and vesicopustules occurring principally on trunk and upper portion of ex

on one of the above regimens. However if pruritus is severe and distracting, refer for examination for pathologic anorectal conditions or pinworms, and hospital treatment.

Hospital Treatment

1. If available, small divided doses of x rays are useful as a palliative agent, 75 r twice weekly for two to five weeks. *Caution* Expert administration protection of gonads.
2. Proctologic treatment as indicated.
3. Carbolfuchsin paint, ℞ 44, once daily May be used in conjunction with
4. $KMnO_4$ sitz baths twice daily or Burow's solution compresses or sitz baths, ℞ 38, *a* or *b*
5. 5 per cent sulfathiazole or sulfadiazine in emulsion base (℞ 58 or 59) often very useful.
6. Injections of alcohol or of local anesthetics, or tattooing with cinnabar should be carried out, when necessary by a specially qualified medical officer only
7. Use infusion of quassia enema as therapeutic test for pinworms If there is relief of pruritus for a few days after this treatment consider course of gentian violet orally (gentian violet enseals, Lilly)—the dose is 0 06 gm. three times daily for eight days, and the course may be repeated after a rest of one week. The ova of Oxyuris vermicularis (pinworms) can be seen on examination of a cellophane swab under the microscope (special experience required) Do not overlook pinworms or other parasites as a cause of pruritus ani.

Medical Backgrounds of Pruritus.—These include diabetes, nephritis (uremia), diseases of the biliary tract (with or without clinical jaundice) internal malignancy leukemia, and other lymphoblastomas, intestinal parasites, anxiety and tension states

Anogenital Pruritus.—Almost all persons have occasional itching of the anus. At times it becomes so severe and persistent as to be distracting and to cause loss of sleep The principal causes are

1 *Poor hygiene* Few patients cleanse the anal region adequately after defecation.
2. Contact dermatitis. Weeds used for wiping anus clothing suppositories, foods or drugs in feces.
3 Cutaneous disease. Fungous infections (not common) eczematous pyoderma, psoriasis, seborrheic dermatitis, neurodermatitis.
4. *Pathologic conditions of rectum and anus* Fissures, cryptitis, sinuses, etc.
5 Constipation or diarrhea.
6 Intestinal parasites (pinworms ascaris etc.)

Simplified Treatment

1 *Thorough cleansing* after bowel movement. Moistened toilet paper or cloth
2. Application of shake lotion ℞ 3 or 4 or paste base ℞ 7 after bowel movement.
3 If not effective, paint with 5 to 10 per cent silver nitrate once daily or
4 Pragmatar ointment, ℞ 14
5 If considerable inflammation, potassium permanganate, ℞ 11 as compress or sitz bath (see p 143) Most patients will become reasonably comfortable

on one of the above regimens. However if pruritus is severe and distracting refer for examination for pathologic anorectal conditions or pinworms, and hospital treatment.

Hospital Treatment

1 If available, small divided doses of x rays are useful as a palliative agent, 75 r twice weekly for two to five weeks. *Caution* Expert administration protection of gonads.
2. Proctologic treatment as indicated.
3 Carbolfuchsin paint, ℞ 44, once daily May be used in conjunction with
4. $KMnO_4$ sitz baths twice daily or Burow's solution compresses or sitz baths, ℞ 38, *a* or *b*
5. 5 per cent sulfathiazole or sulfadiazine in emulsion base (℞ 58 or 59) often very useful.
6. Injections of alcohol or of local anesthetics, or tattooing with cinnabar should be carried out, when necessary by a specially qualified medical officer only
7 Use infusion of quassia enema as therapeutic test for pinworms if there is relief of pruritus for a few days after this treatment consider course of gentian violet orally (gentian violet enseals, Lilly)—the dose is 0 06 gm. three times daily for eight days and the course may be repeated after a rest of one week. The ova of Oxyuris vermicularis (pinworms) can be seen on examination of a cellophane swab under the microscope (special experience required) Do not overlook pinworms or other parasites as a cause of pruritus ani.

Dry Skin or Winter Itch (Pruritus Hiemalis)

Simplified Treatment

1 Avoid too frequent hot soap and water bathing Rinse soap off skin thoroughly Emulsion base, ℞ 58 or ℞ 59 in place of soap
2 Grease skin frequently Boric acid ointment, ℞ 18, or ointment base ℞ 6 with menthol and camphor

Dry Skin (Ichthyosis, the True Familial Type)

1 Distribution face, hands, extensor surface of extremities (particularly elbows and knees) buttocks, upper back (see Fig 11)
2 Various degrees of thickening and dry scaling Mild to severe types (see Fig 73)
3 Seasonal variation Worse in cold, dry weather
4 Intolerance to soap and other alkaline substances. Made worse by anything having a defatting' action on skin soap and hot water alcohol gasoline, kerosene carbon tetrachloride, etc.
5 Better at puberty worse with increasing age
6 The underlying factor in a variety of dermatoses chapping contact dermatitis of hands patchy dry eczematous eruptions in "ichthyotic distribution, senile keratoses, excessive callosities, mild scaling eczema of face.

Simplified Treatment

1 Grease and more grease" (℞ 6 17 18)
2 Avoidance of excessive hot soap and water bathing
3 Appropriate treatment of secondary eczema or pyoderma Avoid drying lotions, sulfur and resorcin
4 Soap substitute (see p 136)
5 In severe ichthyosis transfer of patient to duty in hot climate if feasible.

APPENDIX

CERTAIN basic medicaments are essential to the management of dermatoses encountered in field, station dispensaries, or small sick bays. So far as is feasible, depending on availability and other factors, all of the medicaments and supplies in the "Simplified Formulary" are to be standard equipment for the battalion medical chests in the Army and on small ships and stations in the Navy While the number and types of preparations in the "Simplified Formulary" have been kept to the minimum necessary it is probable that they will be adequate for the initial local treatment of nearly all skin lesions, provided proper selection is employed. To assist in their use, certain indications, contraindications, and directions are included with each item on this list. These directions are not complete, but are only complementary to the more detailed directions given in appropriate sections of this manual, and are intended only to prevent gross misuse.

The medicaments in the "Hospital or Extended Formulary" should be adequate for the treatment of all but the most unusual dermatoses. Where essential, directions for the preparation of prescriptions are given. The list of prescriptions has been made sufficiently complete to allow for varying individual preferences and practices of the attending medical officer Certain prepa-

Valuable suggestions, tests, and criticism regarding the Formulary have been made by Capt. M. S. Mathis (MC.) U.S.N Dr E. Fullerton Cook, of the Philadelphia College of Pharmacy Dr. Frederick Lascoff, of New York, and Mr B. H. Hoffstein, of Philadelphia.

rations will be used much less frequently than but are included because they meet an occasional need It *is not implied* that *all* these drugs and need be kept in stock and immediately available. of them will be used with sufficient frequency *pharmacist to keep them on his shelves,* and th be selected by the responsible medical officer cordance with his needs and preferences. So far sible, all the drugs and supplies listed in the Si and Hospital Formularies will be available throug lar channels of medical supply

Each preparation has been given a number referred to by this number in the text of the ma

SIMPLIFIED FORMULARY

(For Battalion Medical Chests, Small Sick Bays and Statio

It will be noted that every effort has been m avoid inclusion of liquid medicaments (shake lotion tures, etc.) in this Simplified Formulary To fa transportation and storage, the combined basic dients of these are supplied in dry form and i easily mixed with the liquid vehicle in the field

℞ 1. (a) *Present General Army Issue Foot Powder*

	Gm. o Cc
Salicylic acid	2.0
Boric acid	6.0
Zinc stearate	3.0
Exsiccated alum	1.0
Starch	10.0
Powdered talc	78.0

℞ 1 (b) *Alternate Formula*

	Gm o Cc
Zinc peroxide	10.0
Tannic acid	5.0
Boric acid	20.0
Bentonite	10.0

℞ 2. *Basic Powder for Lotion, Ointment and Past (for the Preparation of ℞ 3, 4, 5)*

	Gm.
Zinc oxide	50.0
Talc	40 0
Bentonite	10 0

℞ 3. *Basic Lotion.*

	Gm. or Cc.
Basic powder (℞ 2)	60.0
Water	60.0
(Or water and 95 pe cent alcohol āā, to make 60.0)	

This forms an easily prepared lotion which is probably the most useful single dermatologic preparation (see p 146) If drying effect is desired, equal parts of water and alcohol are used in place of water alone. Drinking water may be used for preparation. (T make thinner simply add more water)

℞ 4. *A tipruritic Powder*

	Gm.
Camphor (powdered)	5 0
Menthol	0.5

T increase antipruritic effect, the above powder can be added to each 100 gm. or cc. of prescriptions 2, 3, 5, 6, 7 etc. The lotion should be applied several times daily preferably with a soft paint brush (see Fig. 89) The affected area should be cleansed once daily Four to eight-ounce wide-mouthed bottles are most convenient for dispensing.

Indications.—Any acute eczematous process. Itching. Insect bites. Prickly heat. Intertrigo.

℞ 5. *Dusting Powder*

The basi powder (℞ 2) may be used alone or with the addition of the antipruritic powder of ℞ 4.

Indications.—Treatment of skin folds. Antipruritic. Prevention of irritation from air or friction. If used in the groin, the powder should be mixed with three parts of talc to prevent irritation from the camphor or menthol.

℞ 6. *Ointment Base*

	Gm.
Basic powder (℞ 2)—with or without addition of ℞ 4	20.0
Petrolatum	80.0

Indications.—Mild antipruritic ointment. Use only on dry surfaces. A useful initial treatment for chronic dermatitis or subsiding dermatitis venenata. Do not use in scalp.

rations will be used much less frequently than others, but are included because they meet an occasional definite need. It *is not implied* that *all* these drugs and supplies need be kept in stock and immediately available. Certain of them will be used with sufficient frequency for the pharmacist to keep them on his shelves, and these will be selected by the responsible medical officer in accordance with his needs and preferences. So far as possible, all the drugs and supplies listed in the Simplified and Hospital Formularies will be available through regular channels of medical supply

Each preparation has been given a number and is referred to by this number in the text of the manual

SIMPLIFIED FORMULARY

(For Battalion Medical Chests, Small Sick Bays and Stations)

It will be noted that every effort has been made to avoid inclusion of liquid medicaments (shake lotions, tinctures, etc.) in this Simplified Formulary To facilitate transportation and storage, the combined basic ingredients of these are supplied in dry form and may be easily mixed with the liquid vehicle in the field

R 1. (a) *Present General Army Issue Foot Powder*

	Gm. or Cc
Salicylic acid	2.0
Boric acid	6.0
Zinc stearate	3.0
Exsiccated alum	1.0
Starch	10.0
Powdered talc	78.0

R 1. (b) *Alternate Formula*

	Gm. or Cc
Zinc peroxide	10.0
Tannic acid	5.0
Boric acid	20.0
Bentonite	10.0
Talc	55.0

Contraindications.—Almost none. Compatible with all commonly used preparations. Remember that it stains the skin and enamelware. Make sure that tablets are completely dissolved—contact of undissolved particles with skin will produce chemical burns.

℞ 12. *Tablet Silver Nitrate,* 0.5 gm.

For preparation of 0.1 per cent to 0.5 per cent, 5 per cent and 10 per cent solutions.

Indications.—In 0.1 to 0.5 per cent strength (one to five tablets to 500 cc. of water) as wet dressings for secondarily infected dermatitis, fungous infections of groin (tinea cruris) perianal dermatitis, intertrigo. In 5 per cent and 10 per cent strengths (one tablet to 10 cc. or to 5 cc. of water) as coagulating, antiseptic application to the bases of impetigo lesions, ulcers, fissures, in pruritus ani, intertrigo, aphthous ulcers, perlèche, etc.

℞ 13. *Sulfur Ointment,* U.S.P XI, 15 per cent.

Indications.—Scabies (Chap. XV) Occasionally in seborrheic dermatitis and ringworm. When possible, avoid application for more than three days consecutively; sulfur dermatitis may result.

℞ 14 *Pragmatar Ointment*

	Gm. or Cc.
Sulfur	3.0
Salicylic acid	3.0
Cetyl tar distillate	4.0
Duponol	1.0
Petrolatum	38.0
Stearyl alcohol	18.0
Cetyl alcohol	7.0
Mineral oil	25.0

Such an ointment can be obtained from the Smith, Kline and French Laboratories, Philadelphia.

Indications.—This and ℞ 68 constitute the most useful simple treatment for seborrheic dermatitis and psoriasis of the scalp. The base is water miscible and washes out. Excellent for fungous infections of the groin or feet; pityriasis rosea.

℞ 15. *Ammoniated Mercury Ointment,* U.S.P XI 10 per cent.

Indications.—Inferior in bacteriostatic action to sulfonamides, but old, tried, and useful for impetigo. Good initial treatment for psoriasis, infected ringworm or seborrheic dermatitis.

℞ 16. *Zinc Oxid Ointment,* U.S.P XI.

Indications.—Soothing, bland, protective ointment. May be used as base for incorporation of sulfur-resorcin powder in acne, seborrheic dermatitis, fungous infections. (Not in scalp.)

℞ 7 *Paste Base*

	Gm
Basic powder (℞ 2)—with or without addition of ℞ 4	50.0
Petrolatum	50.0

Indications.—For strong antipruritic effect, or when drying or protective effects are desired. Will remain on skin for long periods. Difficult to remove from hairy regions. Useful in persistent patchy eczema, chronic dermatitis of legs, feet, and hands, insect bites, etc.

℞ 8. *Sulfur Resorcin Powder*

Powders each containing:

	Gm.
Sulfur	4 0
Resorcin	2.0

Add one or two powders to 100 cc. of basic lotion (℞ 3) One powder produces an antiseptic and antiparasitic lotion with *mild* keratolytic and exfoliating effects. Two powders produce a lotion relatively *strong* in these properties. May also be used in plain water or water and alcohol.

Indications.—Acne (p 245) Seborrheic dermatitis (p 264) except scalp Pityriasis rosea. Fungous infection of the groin (tinea cruris crotch inch) (see p 213) Tinea versicolor Prickly heat. Folliculitis.

Contraindications.—Should not be applied too frequently ordinarily not over twice daily Watch for undue redness or peeling from sulfur or resorcin, particularly when prescribing the double strength.

℞ 9 *Sulfadiazine Ointment or Cream* (5 per cent)

Indications—Pyoderma (see Chap VIII)

℞ 10. *Sulfadiazine Tannic Acid Jelly*

Indications.—First treatment of burns secondarily infected contact dermatitis or eczema

℞ 11. *Tablets Potassium Permanganate* 5 grains.

One tablet dissolved in three quarts of water makes approximately a 1 9000 dilution as ordinarily used for compresses wet dressings, or soaks (see p 139) *Fifteen to forty-five tablets to* the tub for antipruritic and medicated bath (see p. 136)

Indications.—Soothing and moderately antiseptic wet dressings for acute dermatitis dermatophytosis pyoderma. In strong solution (6 per cent, six tablets to the ounce of water) it may be painted on areas of contact dermatitis or ringworm.

℞ 25.

	Gm. or Cc.
Menthol	0.5
Phenol	0.5
Shake lotion I or II (℞ 23 or ℞ 24) to make	100.0

℞ 26. *Antipruritic Lotion II*

	Gm. or Cc.
Menthol	0.25
Phenol	0.5
Resorcin	3.0
Purified solution of coal tar (liq. carb. deterg.)	10.0
Benzocaine (ethyl aminobenzoate)	5.0
Shake lotion I or II (℞ 23 or ℞ 24) to make	100.0

LOTIONS FOR ACNE, SEBORRHEIC DERMATITIS, ETC.

℞ 27. *Lotio Alba*, N.F. VI.

℞ 28. *Drying Lotion Alba*

	Cc.
Acetone	20.0
Lotio alba, to make	100.0

(For very oily skin)

℞ 29. *Sulfur and Resorcin Lotion No. I (Weak)*

	Gm. Cc.
Resorcinol	2.0
Sulfur ppt.	5.0
Zinc oxide	
Talc ää	20.0
Glycerin	10.0
Aqua	
Alcohol (95 per cent) ää	35.0

℞ 30. *Sulfur and Resorcin Lotion No. II (Strong)*

Same as weak (℞ 29) except that resorcinol is increased to 4 per cent and sulfur to 10 per cent.

SCALP LOTIONS

℞ 31. *Scalp Lotion No. I (for Dark Hair)*

	Gm. or Cc.
Resorcinol	4.0
Salicylic acid	4.0
Mercury bichloride	0.2
Glycerin	2.0
Aqua	
Alcohol (95 per cent) ää, to make	240.0

℞ 17 *Petrolatum*

Indications.—Bland indifferent grease for dry skin or subsiding dermatitis. As vehicle for ointment base (℞ 6) and paste base (℞ 7) Surgical dressings

℞ 18. *Boric Acid Ointment* U.S.P XI

Indications.—Particularly useful in dermatitis about eyes, in dry scaly and healing stages of contact dermatitis and eczema. Surgical dressings. Antiseptic power negligible

℞ 19. *Whitfield's Ointment (One-half Strength)*

Salicylic acid	3.0
Benzoic acid	6.0
Emulsion base ℞ 54 or ℞ 59 (or simple ointment) to make	100 0

Indications.—The most widely used single remedy for ringworm of the feet. Can be further diluted with equal parts of zinc oxide ointment (℞ 16) or petrolatum (℞ 17) *Do not apply* in acute swollen oozing reddened or secondarily infected cases. For treatment *of subacute or chronic phase (see Chap VII)*

℞ 20. *Tr Iodine* U.S.P XI.

Indications.—Aside from surgical antisepsis, useful in fissures and subacute or chronic dermatophytosis. Best diluted with alcohol 1 5

EXTENDED FORMULARY FOR HOSPITALS DISPENSARIES, LARGE SICK BAYS, ETC.

(In Addition to Simplified Formulary Listed Above)

LOTIONS

SOOTHING LOTIONS

℞ 21. *Calamine Lotion* N F VI

℞ 22. *Calamine Liniment*, N F VI

℞ 23. *Shake Lotion I Drying*

	Gm or Cc
Zinc oxide	20.0
Talc	20.0
Glycerin	15.0
Aqua	35.0
Alcohol (95 per cent)	35.0

℞ 24. *Shake Lotion II Wetting*

	Gm. or Cc.
Zinc oxide	20.0
Talc	20.0
Glycerin	15 0
Water	70 0

Such tablets can be obtained from the Dome Chemicals, Inc., New York City Aluminum subacetate, lead-free. One tablet to each 8 to 16 ounces of water

As wet dressing.

TINCTURES

℞ 39. *Tincture of Merthiolate.*

℞ 40. *Acetic Tincture of Larkspur* N.F VI.

For pediculosis.

℞ 41. *Antipruritic Tincture*

	Gm. or Cc.
Menthol	0.5
Phenol	0.5
Tannic acid	5.0
Glycerin	5.0
Alcohol (95 per cent)	
Water āā, to make	100.0

℞ 42. *Compound Tincture of Benzoin*, U.S.P XI.

Useful in itching ringworm of feet also in heat rashes.

℞ 43. *Tincture of Metaphen.*

MISCELLANEOUS LIQUIDS

℞ 44. Castellani's Paint

	Gm. or Cc.
Saturated alcoholic sol. basic fuchsin	10.0
Aqueous solution phenol 5 per cent	100.0
Filter and add	
Boric acid	1.0
After two hours, add	
Acetone	5.0
Two hours later add	
Resorcin	10.0

Subacute or chronic ringworm, nummular eczema, intertrigo.

Keep in dark, stoppered bottle, and use diluted with equal parts of water if necessary at first, then full strength. (Does not keep over one month.)

℞ 45. *Crude Coal Tar Paint*

	Gm. or Cc.
Acetone	
Flexible collodion āā	4.0
Crude coal tar to make	20.0
(mix well)	

Eczema, localized types.

℞ 32. *Scalp Lotion No II (for Blond Hair)*

	Gm. or Cc
Chloral hydrate	4 0
Salicylic acid	4 0
Mercury bichloride	0.2
Glycerin	2.0
Alcohol (95 per cent)	
Aqua aa, to make	240.0

N B. If hair is dry replace glycerin with 0.5 to 4 per cent castor oil in both scalp lotions (℞ 31 and ℞ 32)

℞ 33. *Sunburn Protective and Treatment Lotion*

	Gm. or Cc
Tannic acid	12.0
Phenyl salicylate	8.0
Glycerin	8.0
Alcohol (70 per cent) to make	240.0

Will stain white clothing

SOLUTIONS

℞ 34. *10 per cent Sodium Thiosulfate (Aqueous)*

Tinea versicolor

℞ 35. *10 per cent to 25 per cent Aluminum Chloride (in Aqueous or Alcoholic Solution)*

Excessive sweating. (May irritate)

℞ 36. *1 per cent to 2 per cent Gentian Violet (in Aqueous or Alcoholic Solution)*

Antiseptic superficial yeast (Monilia) pyodermas after electrodesiccation.

℞ 37 *Sulfur Solution.* Sulfurated Potash N.F VI U.S P XI or Solution of Sulfurated Lime U S P XI (Vleminckx s Solution) Dilute one part to from ten to twenty of hot water

Most effective in cystic acne in sycosis barbae *preceding* application of quinolor ointment (℞ 81)

℞ 38. (a) *Burow's Solution* Solution of Aluminum Subacetate N.F VI *(dilute 1 20 with water)* Or if obtainable

Butterworth Wolfe Modification 36 per cent aluminum citrate *(dissolved in hot distilled water)* one teaspoonful to 300 to 475 of water

(b) *Burow's Solution Domeboro Tablets (Improved)*

Such tablets can be obtained from the Doma Chemicals, Inc., New York City. Aluminum subacetate, lead-free. One tablet to each 8 to 16 ounces of water

As wet dressing.

TINCTURES

℞ 39. *Tincture of Merthiolate.*

℞ 40. *Acetic Tincture of Larkspur* N.F. VI.

For pediculosis.

℞ 41. *Antipruritic Tincture*

	Gm. or Cc.
Menthol	0.5
Phenol	0.5
Tannic acid	5.0
Glycerin	5.0
Alcohol (95 per cent)	
Water ãã, to make	100.0

℞ 42. *Compound Tincture of Benzoin*, U.S.P. XI.

Useful in itching ringworm of feet; also in heat rashes.

℞ 43. *Tincture of Metaphen.*

MISCELLANEOUS LIQUIDS

℞ 44. *Castellani's Paint*

	Gm. or Cc.
Saturated alcoholic sol. basic fuchsin	10.0
Aqueous solution phenol 5 per cent	100.0
Filter and add	
Boric acid	1.0
After two hours, add	
Acetone	5.0
Two hours later add	
Resorcin	10.0

Subacute or chronic ringworm, nummular eczema, intertrigo.
Keep in dark, stoppered bottle, and use diluted with equal parts of water if necessary at first, then full strength. (Does not keep over one month.)

℞ 45. *Crude Coal Tar Paint*

	Gm. or Cc.
Acetone	
Flexible collodion ãã	4.0
Crude coal tar to make	30.0
(mix well)	

Eczema, localized types.

℞ 46. *Camphor Phenol Eutexia*

Camphor (crystalline)
Phenol (crystalline) āā, to make 15.0

Dry ringworm of feet. Caution! (see p. 206)

℞ 47. *Thymol-Salicylic Acid Solution*

	Gm. or Cc.
Salicylic acid	3.0 to 10.0
Thymol	1.0
Alcohol (70 per cent) to make	100.0

Hyperhidrosis, scaling, and ringworm of feet.

℞ 48. *Salicylic Acid in Collodion or Plaster "Corn Cure" or "Callus Cure"*

Salicylic acid
Alcohol āā 10 per cent to 20 per cent
Flexible collodion q.s. ad

℞ 49. *Salicylic Acid Plaster* 20 per cent to 40 per cent.

Such plaster can be obtained from Duke Laboratories or Johnson and Johnson.

℞ 50. *Whitfield's Solution*

	Gm. or Cc.
Salicylic acid	3.0
Benzoic acid	6.0
Alcohol (70 per cent) to make	100.0

℞ 51. *Azochloramid 1:500 in Triacetin*

Ulcers, chronic infected eczema. May be useful in conjunction with local sulfonamide therapy.

Ointment Bases

℞ 52. *Simple Ointment* U.S.P. XI.

℞ 53. *Hydrous Lanolin.*

℞ 54. *Ung. Aquae Rosae* U.S.P. XI *or a Modification*

	Gm. or Cc.
White wax	25.0
Paraffin	10.0
Hydrous lanolin	10.0
Liq. petrolatum (heavy)	105.0
Distilled water	50.0
Sodium borate	1.25

Melt the wax, paraffin, hydrous lanolin, and liquid petrolatum at a temperature of about 70° C. Dissolve the sodium borate in the water at 70° C. Add the aqueous solution to the oils with constant trituration, stirring until emulsified and until the cream has cooled to about 40° C.

℞ 55. *A "Vanishing Cream" Base*

	Gm. or Cc.
Stearic acid	12.5
Glycerin	6.5
Distilled water	75.0
Potassium carbonate	1.2

Breaks down on addition of acids. Clean, useful base for application of tar, sulfur or resorcin.

℞ 56. *Unna's Ointment*

	Gm. or Cc.
Anhydrous lanolin	10.0
Benzoinated lard	20.0
Water	30.0

℞ 57. *"1-2-3" Ointment*

	Gm. or Cc.
Burow' sol.	10.0
Anhydrous lanolin	20.0
Paste of zinc oxide	30.0

BLAND, SOOTHING, COOLING OINTMENT BASES

EMULSION BASES

℞ 58. *Emulsion Base I* (Medium)

	Gm. or Cc.
Sod. benzoate	0.1
(Or phenol 0.02)	
Spermaceti	10.0
Sod. lauryl sulf.	1.0
Stearyl alcohol	10.0
Cetyl alcohol	5.0
Glycerin	10.0
Water	64.0

℞ 59. *Emulsion Base II* (Thin)

	Gm. or Cc.
Sod. benzoate	0.1
(Or phenol 0.02)	
Cetyl alcohol	20.0
Sod. lauryl sulf.	1.0
Glycerin	15.0
Water	64.0

If spermaceti is not available, 2 to 5 per cent white wax may be substituted for it, and the total amount of cetyl and/or stearyl alcohol increased to 15 per cent.

℞ 46. *Camphor Phenol Exteria*

Camphor (crystalline)
Phenol (crystalline) āā, to make 15.0

Dry ringworm of feet. Caution! (see p 206)

℞ 47 *Thymol-Salicylic Acid Solution*

	Gm. or Cc.
Salicylic acid	3.0 to 10.0
Thymol	1.0
Alcohol (70 per cent) to make	100.0

Hyperhidrosis scaling and ringworm of feet.

℞ 48. *Salicylic Acid in Collodion or Plaster Corn Cure or "Callus Cure"*

Salicylic acid
Alcohol āā 10 per cent to 20 per cent
Flexible collodion qs. ad

℞ 49. *Salicylic Acid Plaster* 20 per cent to 40 per cent.

Such plaster can be obtained from Duke Laboratories or Johnson and Johnson.

℞ 50. *Whitfield's Solution*

	Gm. or Cc.
Salicylic acid	3.0
Benzoic acid	6.0
Alcohol (70 per cent) to make	100.0

℞ 51. *Azochloramid 1 500 in Triacetin*

Ulcers, chronic infected eczema. May be useful in conjunction with local sulfonamide therapy

OINTMENT BASES

℞ 52. *Simple Ointment* U.S.P XI

℞ 53. *Hydrous Lanolin.*

℞ 54. *Ung Aquae Rosae* U.S.P XI *or a Modification*

	Gm. or Cc
White wax	25.0
Paraffin	10.0
Hydrous lanolin	10.0
Liq petrolatum (heavy)	105.0
Distilled water	50.0
Sodium borate	1.25

Melt the wax, paraffin, hydrous lanolin and liquid petrolatum at a temperature of about 70 C. Dissolve the sodium borate in the water at 70 C. Add the aqueous solution to the oils with constant trituration, stirring until emulsified and until the cream has cooled to about 40 C.

℞ 66. *Salicylic Acid and Ammoniated Mercury Ointment*

	Gm.
Salicylic acid	5.0
Ung. ammon. mercury U.S.P. XI, to make	100.0

For psoriasis.

℞ 67. *Strong Scalp Ointment*

	Gm. or Cc.
Oil of cade	20.0
Sulfur ppt. (or hydrarg. am.)	10.0
Salicylic acid	5.0
℞ 58 or 59 or	
Cold cream, to make	100.0

℞ 68. *Mild Scalp Ointment*

	Gm. or Cc.
Sulfur ppt. (or hydrarg. am.)	
Salicylic acid āā	3.0
Solution of coal tar N.F. VI	
(liq. carb. deterg.)	12.0
℞ 58 or 59 or	
Cold cream, to make	100.0

℞ 69. *Ung. Sulfur and Salicylic Acid*

	Gm. or Cc.
Sulfur ppt.	
Salicylic acid āā	3.0
Simple ointment, to make	100.0

℞ 70. Whitfield Ointment N.F. VI.

℞ 71. *Chrysarobin Ointment*

Chrysarobin 0.1 per cent to 0.5 per cent to 5 per cent
Petrolatum, to make 60.0

Must be fresh chrysarobin, and freshly prepared.

℞ 72. *Dioxyanthranol Ointment*

Anthralin (or cignolin) 0.1 per cent to 1 per cent
Petrolatum, to make 60.0

Anthralin ointment can be obtained from the Abbott Laboratories.

℞ 73. *Antiscabetic Ointment No. 1*

	Gm. or Cc.
Sulfur ppt.	
Balsam of Peru āā	12.0
Castor oil	12.0
Lanolin	
Petrolatum āā, to make	120.0

Directions for preparing ℞ 58 and ℞ 59: Heat the water glycerin and sod. lauryl sulfate. Melt the lipoid ingredients. Mix the two thoroughly and continue stirring until the mixture is cool.

The first formula yields a fairly firm emulsion which carries sulfonamides and other medicaments well. The second is softer and particularly useful in hairy regions and for applying medicaments to burns and other tender areas. Both are useful as soap substitutes (detergents)

OINTMENTS

℞ 60. *Boro Ointment*

	Gm.
Boric acid cream	5.0
Ung. aq. rosae to make	100 0

Soothing cooling very useful bland ointment. Antipruritics, such as 0.25 to 0.5 per cent menthol and/or 0.5 per cent phenol, or 2 per cent camphor may be added.

℞ 61. *Mild Stimulating Ointment*

	Gm.
Ichthyol	3.0
Ung zinc oxide, to make	100 0

Useful in dry chronic eczema.

℞ 62. *Deck s Ointment*

	Gm. or Cc.
Salicylic acid	2.0
Oil of eucalyptus	12.0
Bismuth subnitrate	12.0
Wool fat	
Ung. hydrarg ammoniat. ãã, to make	100.0

℞ 63. *Antipruritic Ointment No I*

	Gm.
Menthol	0.5
Camphor	1 0
Cold cream, to make	100 0

℞ 64. *Antipruritic Ointment No. II (Flesh-Colored)*

	Gm. or Cc.
Calamine	5.0
Zinc oxide	5.0
Camphor phenol	1 0
Eucalyptol	0.2
Cold cream to make	100 0

℞ 65. *2.5 Per Cent Ammoniated Mercury Ointment*

	Gm.
Ung. ammon. mercury U.S.P XI	25 0
Cold cream, to make	100.00

Mix tar with castor oil and add zinc oxide. Mix well and let stand twenty-four hours. Mix cornstarch with petrolatum. Combine the two mixtures and triturate until smooth.

℞ 81. *Gold Sodium Thiomalate*

Ampules containing 5, 10, 50 and 100 mg. each.

Fo chronic discoid lupus erythematosus.

℞ 82. *Cuprex (Merck)*

For pediculosis.

N.B. Many medicaments used in dermatology which are also in general medical use, have been omitted from this dermatologic formulary. It is assumed that various forms of arsenicals of bismuth salts, sulfonamide preparations; quinine, tabrine, calcium salts for injection and by mouth, liver extracts, vitamins hormones; allergens, "biologicals, etc., for skin testing (Frei and Ducrey vaccines, etc.) for desensitization and immunization and other generally useful medicaments will be available in all larger medical units of the armed forces.

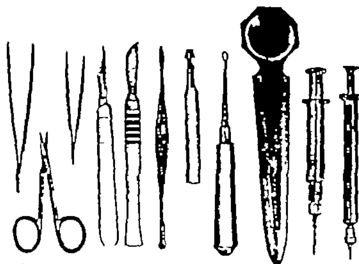


Fig. 109.—Simple instruments most commonly used in dermatologic diagnosis and treatment. The sixth, seventh, and eighth instruments from the left are acne stilet and comedone extractor, biopsy punch and dermal ring curet.

℞ 74. *Antiscabetic Ointment No II (Ointment for Rapid Scabies Cure)*

Soft soap
Isopropyl (or ethyl) alcohol
Benzyl benzoate āā, to make 120 0

℞ 75. *Antiscabetic Ointment No. III*

	Gm. or Cc
Benzyl benzoate	30.0
℞ 58 or ℞ 59 (emulsion base)	70.0

℞ 76. *5 per cent Sulfathiazole or Sulfadiazine Cream* (5 per cent Sulfathiazole or Sulfadiazine in Base ℞ 58 or 59)

℞ 77 *Ung Quinolor*

	Gm. or Cc
Chlorhydroxy quinolines (mixture)	0.5
Benzoyl peroxide (explosive)	10.0
Oil of white thyme	0.5
Eucalyptol	1.3
Petrolatum	
Anhydrous lanolin āā, to make	100.0

Such an ointment can be obtained from E. R. Squibb and Sons. The best single remedy for sycosis barbae (barber's itch—see p 233)

℞ 78. *Vioform Ointment*

Vioform powder 3 per cent
Petrolatum, to make 60 0

Vioform powder can be obtained from the Ciba Pharmaceutical Corporation.

Excellent for irritated or eczematized psoriasis (see p. 261) many forms of infected eczema, infectious eczematoid dermatitis etc.

℞ 79. *Compound Tar Cream*

	Gm. or Cc
Menthol	0.3
Phenol	0.3
Crude coal tar	1.8
Sulf precip. or am. mercury	1.8
Emulsion base (℞ 58 or 59) to make	*60.0*

℞ 80. *Crude Coal Tar Ointment*

	Gm. or Cc
Crude coal tar	4.0
Zinc oxide	4.0
Castor oil	4 0
Cornstarch	30.0
Petrolatum	26.0

INDEX